Mastering Math Facts Blackline Masters

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"This is concrete - something they can follow. A do-it-yourself strategy!"

Rita Wachter, Math Resource Teacher

Mastering Math Facts A structured program of sequential practice

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OVERVIEW OF MASTERING MATH FACTS

Mastering Math Facts is a structured program for sequential practice of math facts. Successful practice on math facts requires that students practice and learn few enough facts at a time so that they can simply remember or memorize the answers. Facts in Mastering Math Facts are introduced in sets of two and their reverses. The program is structured the same way for all four operations (addition, subtraction, multiplication, and division) so teachers can implement a simple daily routine that can be followed all year. Quicker learners can move onto master higher operations, e.g., division, while slower students proceed at their own rate without disrupting the routine. Each day's routine practice should take no more than six or seven minutes of class time. See the next page for a more detailed description of the steps of implementing Mastering Math Facts.

The program's daily component consists of one-page practice sheets lettered A-Z. The top half of each page gives practice focused on 2 facts and their reverses. Then the bottom half is a timed test on all the facts learned thus far. If the student does not pass, s/he repeats the page again the next day. If the student passes 40 problems correct in one minute, s/he goes on to the next page.

The next page adds only two more facts and their reverses to the ones already mastered. This gradual accumulation of small numbers of facts to be learned each time is the unique feature that makes work in *Mastering Math Facts* so successful and motivating for students. The routine is the same the following day: students practice on the top half-focused on the facts learned thus far, then take a timed test on the bottom half. Students record their efforts on a rocket chart on which they color in lettered squares for each sheet they pass.

There are placement tests (called "Where should I begin in ...?" test) for accelerating students into an operation in which they already have some proficiency. Because not all children can write the answers to 40 problems in one minute there is a test of writing speed titled "How fast can you write?" The results indicate what accommodated goals (see the Goal Sheets) are appropriate for students who can't write fast enough to answer 40 problems in a minute. Students with such adjusted goals are expected to always meet or beat their previous best to pass.

Within each operation there are also ten progress-monitoring tests of ALL the facts (called 2-minute timings). Every week or two students take these two-minute tests and graph the results on the Graph of My Progress provided. This enables the teacher and students to keep track of their progress in memorizing these facts. The graphs can also be used for IEP goals and objectives as well as for evidence of learning for Title 1 plans.

Coloring in the rocket chart gives an opportunity for children to savor their incremental successes. Additional recognition of student success can be given in the form of certificates. Parental assistance in practicing can be promoted by use of a parent letter. Extensive directions and suggestions for successful implementation follow this overview.

Steps of implementing Mastering Math Facts

Begin with initial assessments

- 1. Administer the one-minute test, "How fast can you write?".
- 2. Use standard or alternative goal sheet to select goals for each student based on writing speed.
- 3. Begin the whole class at Set A or administer the
 - "Where should I begin in . . ." test (one for each operation).

Establish the Daily Routine

- 1. Each student has the lettered sheet on which they're working.
- 2. Each student has an answer key packet.
- 3. Students practice in pairs for 90 seconds to 3 minutes each.
 - a) One student says the facts and the answers on the top half of the sheet.
 - b) Partner with answer key gives corrective feedback.
 - c) Then students switch roles.
- 4. Students write their goal for the 1-minute timing at the bottom of the sheet.
- 5. One-minute timing/test on the bottom half is administered to whole class.
- 6. All students fill in the date on the rocket chart.
- 7. Students who pass—meet or beat their goal (previous high score):
 - a) turn in sheet to teacher for checking
 - b) move on to a new sheet the next day
 - c) are recognized in some way ("Stand up, take a bow!")
- 8. Student who do not pass:
 - a) keep sheet and take it home for homework practice
 - b) do the same sheet again the next day.

Routine for Weekly 2-minute timing

- 1. Give all students the same 2-minute timing.
- 2. Teacher administers timing for 2 minutes
- 3. Students correct each others timings
- 4. Have students chart their scores on the Graph of My Progress.
- 5. Recognize anyone who beats their previous best score.

PREFACE: WHEN TO BEGIN MATH FACTS MEMORIZATION

Addition. You may begin practice on memorization of the addition facts as soon as students are able to correctly "find the sum" of any addition fact up to 9 + 9 without difficulty (as soon as they can "count on"). This is the conceptual or procedural understanding of what addition is all about. Once the kids can do this, they are ready to begin memorization of math facts.

Subtraction. You may begin memorization practice of the subtraction facts as soon as students have learned two things.

- 1) Students are able to correctly subtract any subtraction fact up to 18 9 without difficulty. Again they need to have the conceptual understanding of subtraction first before beginning memorization. But you can tell they have this understanding if you can give them any subtraction fact and with enough time—they can figure it out.
- 2) ALSO children must have finished memorizing the addition facts, before embarking on memorization of subtraction facts. They can certainly start learning the concept, and work on figuring out subtraction facts while they are memorizing the addition facts. But no timed tests or attempts to memorize subtraction until you are certain they have learned addition facts (e.g., completed the Addition portion of *Mastering Math Facts*). Trying to memorize both types of facts at the same time can lead to proactive and retroactive inhibition—a special kind of confusion that inhibits learning and discourages learners. This phenomena is so common in 2nd grades that there is a myth that subtraction facts are harder to memorize than addition facts. For children to learn the facts in number families you need special fact-family worksheets, see *Mastering Math Fact Families*.

Multiplication. You may begin practice to memorize multiplication facts as soon as students are able to correctly figure out any multiplication fact up to 9 X 9 without difficulty. It doesn't matter what method they use—arrays, successive addition, skip counting. As long as they can figure out the answers reliably—then they understand the concept well enough to begin memorization of multiplication facts. Children up through 3rd grade should wait to do multiplication until after they have mastered the addition and subtraction facts.

However, starting in 4th grade <u>multiplication has priority</u>. Begin memorization of multiplication facts, even if students are still counting on their fingers to figure out addition and subtraction facts. This is a matter of "triage" because you cannot be sure that any other teacher

will do math facts to fluency. And if only one operation is learned to fluency or automaticity, it must be multiplication. Multiplication facts are needed for a) multiplication problems, b) division problems, and c) most importantly fractions. Students who are not automatic with multiplication facts can't follow what's going on when shown how to reduce fractions, find equivalent fractions, or even add and subtract unlike fractions. And if they can't learn fractions they won't succeed in algebra or do well on the SAT or get into a good college. What's more multiplication facts can't be counted on fingers (except the nines). And somehow, learning multiplication facts is more "cool" than learning addition and subtraction facts when you're older.

Division. You may begin students on memorization of division facts as soon as students have learned two things.

- 1) They understand division well enough to be able to correctly figure out any division fact up to 81÷9.
- 2) **AND** they have finished memorizing the multiplication facts—for the same reasons as in addition and subtraction.

PART I: HOW TO PLACE STUDENTS IN THE SEQUENCE

Assessment material

The assessment for starting this math facts program consists of two basic tests. The first test is an assessment of writing speed titled "How fast can you write?" which is used to establish initial goals for all timings and the placement assessment. The writing speed test score is translated into daily goals by one of two goal sheets. The second test is a placement test titled "Where should I begin in ...[Addition, Subtraction, Multiplication, or Division]?" The assessments and the selected goal sheet need to be copied for each student who is to be placed.

- The page titled "How fast can you write?" is a test of the writing speed of students. Students who are unable to write quickly (slower fine motor skills) cannot be expected to complete as many fact problems during a timing as students who can write quickly. These pages are designed to determine the speed at which students can write.
- The goal sheets convert the writing speed information into appropriate goals for fluency in writing answers to math fact problems. One is for one-minute timings and the second is for alternatives to one-minute timings that allow the children to develop more rigorous goals than the minimal 40 problems per minute.
- The "Where should I begin in...?" test assesses the specific facts of parts of the sequence to determine where students should begin.
- Two kinds of charts are included for students to keep track of their progress in the program.

 More detailed instructions follow.

How fast can you write? This page is a 1 minute timing to determine the rate at which students can write numerals.

NOTE: Be aware of any students who do not pass a timing within the first week. Such students should either be moved back to a lower part of the sequence or have a re– test of their writing speed and their goals adjusted if warranted.

The directions for the "How fast can you write?" test are on the sheet. Read these aloud. Do not allow any students to start ahead of time as this will invalidate their score. Also make certain that all students have pencils ready to use before they begin.

After the 1 minute is up, stop everyone and have them count the number of boxes they copied. This score should be written on their sheet and their names put on the top.

GOAL SHEET—STANDARD ONE-MINUTE TIMINGS—What are your goals?

The next sheet is a goal setting page for timings. The goal sheet asks students to find their score (number of boxes they copied) from the "How Fast Can You Write?" test. The goals are in a horizontal line to the right of the boxes copied number. Students should first mark the row then circle the entire row which gives them their goals. The numbers from each column then translate into the place at the bottom of the sheet marked "Write your goals here." Once completed the goal sheet (with student name at the top) should be stapled inside their math facts folder for easy reference each day, and update as they reach new goals.

The student's goal is always to meet or beat his or her previous best. Please note that the student's goals increase from the initial level as they beat their goals and improve on actual timings. For example, a student may begin with a goal of 36 correct on a 1 minute timing. A few days later that student answers 38 facts during the 1 minute timing. Thirty— eight becomes the student's new goal, replacing 36. In all future timings on the later sheets the student must answer 38 (meet previous best) or more than 38 (beat previous best) to pass the timing.

What is the purpose of the various goals on the GOAL SHEET?

- The 15 second timing goals will be used in the placement part of the assessment (Where should I begin in...?). This will be explained next.
- The 1 minute timing goals will be used for the daily 1 minute timings at the bottom of the practice sheets. (The daily 1 minute timings are a test to see if the student has mastered all of the facts learned so far and is therefore ready to be introduced to more facts to learn). Remember these are initial goals only and are to be revised upward as soon as students show the ability to complete problems at a faster rate.

• The 2 minute annual goals is used to suggest an appropriate end—of—the—year—goal for the weekly progress monitoring—which is a 2 minute timing on ALL the facts. This is the number of facts we expect the student could answer in 2 minutes, if he/she had learned all the facts in the operation. More on that later.

GOAL SHEET—ALTERNATIVE LENGTH TIMINGS (for more rigorous goals).

We have found that many students learn the math facts with enough skill to go faster than 40 problems per minute. And we know that the faster students become, the easier time they will have in higher levels of math. However, because there are only 40 problems on the bottom half of the sheet, during a one-minute timing students who could do more than 40 problems per minute run out of problems. Therefore, if a teacher wants students to have more challenge than is provided by only being able to answer 40 problems in one minute, then the teacher must shorten the length of the timings.

If the one-minute timing is shortened to 45 seconds then students could get up to a rate of 53 problems per minute, before they run out of problems during the timing period. If the one-minute timing is shortened to 40 seconds, then students could get up to a rate of 60 problems per minute before running out of problems. Sixty problems per minute is an excellent rate for children to achieve. If the one-minute timings are shortened to 30 seconds then rates as high as 80 problems a minute—which is excellent even for adults are achievable.

The alternative goal sheet gives starting point for each of these three alternative length timings. These starting points are the same rate as in the standard goal sheet. The only difference is that there is more room for improvement within the limit of the 40 items on a page. For example, Frank copies 36 boxes on the "How fast can you write?" test. His standard goal for a one minute timing would be 34—a rate of 34 problems per minute. Say Frank's teacher wants the children to have a little bigger challenge and so chooses to use the alternative length timings. The teacher gives Frank the alternative goal sheet and Frank circles the row for 36 boxes. If Frank's teacher decides to use the 40 second timing instead of the one-minute timing Frank can find his goal on the Goal Sheet for Alternative length timings. Frank reads across and sees that his goal is 24 problems in the 40 second timing. This is the same rate of 36 problems in 60 seconds—so Frank isn't being asked to go any faster. But should he be able to do so he could

keep improving his goal, by beating his own personal best. Frank might eventually be able to reach a rate of 60 problems per minute—by doing 40 problems in 40 seconds. But Frank would only have his goals move upward from 24 in 40 seconds when he demonstrated the ability to do more. All Frank has to do is meet or beat his previous best, and if he's capable of improvement his goals will move upward gradually.

Especially slow writers: Students who copied 24 or less boxes in the minute may not have understood the task and should be re– tested and more closely monitored. If, in fact, they are not capable of writing any quicker they need to learn how to write numerals faster before they begin this program. Students who write this slowly (24 or less boxes in 1 minute) will not be able to complete enough problems in the time allowed to benefit from the practice; nor will they be able to really demonstrate fluency in memorizing the facts. Place them in a program to structure their practice writing the digits 0-9 until they are fluent. Our program to do this is called, *Mastering Numerals*. *Mastering Numerals* uses the same daily routine of practice as the math facts program, where students practice for a few minutes and then take a timed test, until they finish that program. Later, you can retest them on the "How fast can you write?" test and then place them into *Mastering Math Facts* or *Mastering Math Fact Families*.

Where should I begin in Addition, Subtraction, Multiplication, or Division? These assessments consist of a series of 15– second timings. They can be found at the beginning of each operation. They are "placement tests" that will help you place students further along in the sequence of facts.

These placement tests are optional. The alternative is to have all your students start at the beginning with Set A. I would not recommend using this "placement" test in situations where few of the students have had opportunities to practice memorization of math facts, or to practice memorization of this operation's facts. Starting children at the beginning of the operation will not slow them down much. When children already know some facts, they will usually pass those sheets on the first try. Children who are moving along, passing one sheet a day, soon find themselves on sheets that require some study.

It is imperative that students do not begin a timing until you say "Go" and that they stop immediately upon "Stop." If you cannot make your students abide by the starting and stopping times the scores will be useless and the placement will be incorrect. If you have this problem (students starting early or continuing to mark answers after time is up) then these students (or all students) will need to either start at the Set 1, or be tested in small groups where compliance with the time restraints can be assured.

Because the tests are so short, there is not much time for frustration. Therefore it is OK to have everyone try all parts and then score them later. *You could have students exchange papers and grade them in class*.

Placement rules. A student who meets his/her goal for a 15- second timing on each part (Sets A-F, G-L, etc.) passes that portion of the sequence. They are assumed to have memorized those facts fluently. Any student who exceeds their goal on the first portion of the test has thereby established a new 15 second goal—they must do as well on the next 15 second test to pass. Next the student should take the test on the next part. They are to begin instruction with the first practice page of the first set they do not pass. Any errors or any skipped problems on the placement tests is an automatic "do not pass" and the student should be sure to study those facts.

<u>Placement example</u>: Billy copied only 21 boxes in the 1 minute test. According to the goal sheet, Billy's goal for a 15 second timing was 8 items correct. On Sets A– F he answered 9 correct, so he passed that set. He also set himself a new goal, of 9 correct. On the test for Sets G– K he answered 8 correct, which was not passing, because it did not meet or beat his previous high score. Therefore, Billy should begin instruction with Set G. Even if Billy got 9 correct on Set L– P he should still begin on Set G and then work his way up the levels.

Even if you choose to start all students at Set A, you would still need to have students complete the "How fast can you write?" assessment. That information would still be needed to set appropriate goals for the timings, but everyone could start instruction together on the same page.

PART II: HOW TO TEACH STUDENTS THE FACTS

The sequence of facts. Within each operation there is a sequence for introducing and learning the facts. The actual sequence is included at the end of these directions. The sequence differs from the usual sequence for several reasons.

- 1) Facts are introduced at a rate of two facts and their reverses per sheet so that students do not have too many to learn at one time. Most students who fail to learn math facts have been introduced to the facts at too fast a rate. When facts are introduced too quickly, students begin to confuse new facts with previously introduced material. That is another time when proactive and retroactive inhibition develops. Then the student has that special kind of confusion which causes it all to become a blur. Students are confusing new facts with old facts, and fail to learn anymore.
- 2) Some of the "more difficult" facts are introduced about midway during the sequence so that students can get more practice with these facts. Research seems to indicate that the "more difficult" facts are only harder because they are learned late in the sequence and have more facts with which to become confused.

Developing automaticity with math facts. The purpose of practice on math facts is to learn them to the level of automaticity. What is automaticity with math facts and why is it important?

Automaticity is the third stage of learning. First we learn facts to the level of accuracy—we can do them correctly if we take our time and concentrate. Next, if we continue practicing, we can develop fluency. Then we can go quickly without making mistakes. Finally, after fluency, if we keep practicing we can develop automaticity. Automaticity is when we can go quickly without errors and without much conscious attention. We can perform other tasks at the same time and still perform quickly and accurately. Automaticity with math facts means we can answer any math fact instantly and without having to stop and think about it. In fact, one good description of automaticity is that it is "obligatory"—you can't help but do it. Students who are automatic in decoding can't help but read a word if you hold it up in front of them. Similarly students who are automatic with their math facts can't help but think of the answer to a math fact when they say the problem to themselves.

Why is automaticity in math facts important? Because the whole point of learning math facts is to use them in the service of higher and more complex math problems. We want students to be thinking about the complex process, the problem-solving or the multi-step algorithm they are learning—not having to stop and ponder the answer to simple math facts. So not only do we want them accurate and fast (fluent) but we also want them to be thinking about other things at the same time (automaticity). One characteristic of students who lack automaticity in math facts is that their math work is full of simple, easy-to-fix errors. We used to call these "careless errors." But these errors stem from not knowing math facts to automaticity—the student can either focus on getting the facts correct or on getting the procedures correct—but cannot focus on both at the same time. So helping students learn math facts to automaticity will improve their ability to learn and retain higher order math skills—because they won't be distracted by trying to remember math facts.

The top half of the practice sheets (Practice on facts through Set ...). The top half of each sheet is designed to provide practice which is concentrated on the most recently introduced facts. This practice should last no more than about three minutes for each student.

At the very top of the page are the "new" facts that are being introduced on this page. Students should be able to figure out the correct answer to the "new" facts before beginning practice. Tell students, "If you have a new sheet today, before you begin practice you MUST figure out the answer to the facts at the top of the page!" If you have a homogeneous group (all working on the same set) you should provide a few minutes of guided practice on these three or four "new" facts each day until your class moves on to the next page.

The top half of the practice sheets function the same way as practice with flashcards. Allow 3 to 6 minutes for practice.

There are at least five methods of practice which can be used on the top half.

- 1) Recommended method—students practice orally in pairs.
- One student has a copy of the answer key and functions as the checker while the practicing student has the problems without answers. The practicing student <u>reads the problems aloud</u> and <u>says the answers aloud</u>. It is critical for students to say the problems aloud before saying

the answer so the whole thing, problem and answer, are memorized together. We want students to have said the whole problem and answer together so often that when they say the problem to themselves the answer pops into mind, unbidden.

- A master answer key is provided—be sure to copy it in a distinctive color to assist in classroom monitoring. Also copy all the sheets needed for a given operation and staple into a booklet format. Then answer keys will be the same regardless of the set of facts on which a student is working. This allows students from different levels to work together without having to hunt up different answer keys.
- The checker watches the answer key and listens for hesitations or mistakes. If the practicing student hesitates, even slightly, before saying the answer the checker should immediately do the correction procedure, explained below. Of course, if the practicing student makes a mistake, the checker should do the correction procedure.
- The correction procedure has three steps. One, the checker interrupts and immediately gives the correct answer. Two, the checker asks the practicing student to repeat the fact and the correct answer at least once and maybe twice or three times. Three, the checker has the practicing student backup three problems and begin again from there. If there is still any hesitation the correction procedure is repeated.
- This correction procedure is the key to two important aspects of practice. One, it ensures that students are reminded of the correct answers, so they can retrieve them from memory—rather than having to figure them out. (We know they can do that, but they will never develop fluency if they continue to have to "figure out" facts.) Two, this correction procedure focuses extra practice on any facts that are still weak.
- Note: If a hesitation or error is made on one of the first three problems on the sheet, the checker should have the practicing student do the next three problems and then go back to the one that was corrected and if answered without hesitation, begin again from there and work forward again.
- Each student practices a minimum of 90 seconds. After a couple of weeks of good "on-task" behavior you can "reluctantly" allow more time, say 2 minutes. Later you can allow them 2 and one half minutes, and then later if students stay on task, up to about 3 minutes each.

- After the first student practices then students switch roles and the second student practices for the same amount of time. It is more important to keep to a set amount of time, than for students to all finish the top half. It is not necessary for students to be on the same set or even on the same operation, as long as answer keys are provided for all checkers.
- Practicing students should say both the problem and the answer every time. This is important because we all remember in verbal chains.
- Saying the facts in a consistent direction helps learn the reverses such as 3 + 6 = 9 and 6 + 3 = 9.
- To help kids with A.D.D. (and their friends) the teacher can make practice into a sprint-like task. "If you can finish the top half, start a new lap at the top and raise your fist in celebration!" Recognize them as they start a second "lap" either with their name on the board or oral recognition—"Jeremy's the first one to get to his second lap. Oh, look at that, Mary and Susie are both on their second laps. Stop everyone, time is up. Now switch roles and raise your hand when you and your partner are ready to begin practicing."
- Here's how to teach students how to do this kind of practice—and get them to comply with the procedures as well. Model how to do this in front of the whole class. At first you should the checker with a student from the class making pretend mistakes, and you tell students the three steps to the correction procedure as you model it. Next you be take the student role and call on students to be the corrector. Make both hesitations and mistakes. Make sure the student corrects with all three steps of the correction. If they don't do part of it, prompt it until they do, then give more hesitations or mistakes for that student to get to demonstrate the correction procedure the right way. Once a student has demonstrated the right procedure for corrections, move on to another student. Keep this up for the usual 5 to 7 minutes allotted for math facts moving from child to child having them demonstrate the correction procedure. If you do this kind of modeling for a few minutes a day for several days students will begin to ask you if they can start doing the practice now. Try telling them that doing practice "the right way" is really "hard" and you're not sure they can do it "the right way" yet. Continue modeling for a few minutes a day for a few more days—not letting students actually start practicing. By the time you actually "allow" them to practice—they'll be so anxious to prove

to you that they know how to do practice "the right way" that no one will even consider doing it any other way.

- 2) The teacher can lead practice with a group that are all on the same set.
- In this style of practice the teacher leads practice with all students together on the same set.

 The teacher can either keep the class together, or keep a group together or form an ad hoc group of students who happen to be working on the same set of facts.
- The advantage of this kind of practice is that it ensures that all students are practicing. It is also an efficient way to teach students how they are supposed to practice. As such a teacher might want to begin with this kind of practice before going to paired practice.
- If the teacher wants to keep the group together, they would all have to progress at the same rate. This means that no one in the group would pass until all the students had passed the set and were ready to move on. Or the teacher could move on when all but one or two students had passed, but would need to provide some other system for the ones "left behind."
- Practice on the top half of the sheet would be led by the teacher, with all students reading the problems aloud and answering in chorus. If any answer was weak (some children not answering), or not unanimous, the teacher would follow the correction procedure.
- The same error correction as in paired practice would be used. In this case, the teacher would give the correct answer, repeat the problem and answer once or twice, then back up three problems and begin again.

The teacher collected an ad hoc group of students who were practicing on some particular set.

After practice tests would allow some to pass that day, but others would not. The teacher could work with a different group the next day.

- 3) Oral practice within small cooperative groups is a third option.
 - All members of a small group would stay together. All students would stay on a set of facts until everyone in their group had passed. The group could move on to the next sheet only when all members had passed their daily 1 minute timing.
 - You would need to organize your class into small groups that distribute low performers evenly throughout the groups in your class.

- The group members would have shared responsibility for seeing that each other learn their facts. Because of this shared responsibility these groups could practice often throughout the day.
- Oral practice would be conducted as above in paired oral practice with answer keys and following the correction procedure.
- It would be critical to encourage the students to practice several other times during the day—which would speed up learning considerably. During any free time such as standing in line, riding on the bus, or waiting for dismissal these small groups could be helping each other with extra practice sessions. A second practice session, even of only one-minute greatly improves learning of facts.
- Additional motivation can be developed by having groups compete against each other to speed up mastery of facts. Be sure that groups understand how to practice effectively and that they know about spreading practice out throughout the day. The cooperative learning research indicates that this competition between groups provides a significant additional incentive.
- 4) Students can practice individually and silently by reading and answering the problems on the top half—whispering to themselves. This would require careful monitoring by the teacher to be effective. The teacher would need to move about the room and bend down frequently and listen carefully to ensure that students were actually rehearsing "under their breath." This method of individual practice has the disadvantage of lacking corrective feedback. When students have a partner or the teacher listening, student errors will be responded to with the correction procedure. Even hesitations will receive extra practice so as to be fixed up. When students work by themselves there is no one to provide this assistance and corrective feedback—and so practice is not nearly as effective. Students can remain slow and continue to count on their fingers with this method of practice and there will be no partner to assist them.
- 5) Students can practice individually and silently by completing the top half of the sheet in writing. This also has the disadvantage of lacking corrective feedback as noted above. Even if the teacher chooses to correct all the written practice sheets the feedback will not be available in a timely enough manner to help the student fix the error. A second disadvantage is that the

student cannot take the sheet home and practice, as the sheet has been completed. More on homework later.

Daily Testing: The bottom half—One Minute Timing

The 1 minute timing each day is a little test. If a student passes the "test" he/she has successfully memorized all the facts given so far. Passing means he/she is ready to be given more facts by moving on the next practice sheet.

If a student does NOT pass the "test" he/she needs more time to practice the facts given so far and should NOT move on the next practice sheet. A student who does not pass needs to work on the same sheet again tomorrow because he/she did not meet his/her goal.

Passing is meeting or exceeding the student's individualized goal with no more errors than allowed. How many errors can be allowed? Some teachers do not allow any errors. This is certainly a good idea. It will impact perhaps one out of five "passes" that would have an error. However, research indicates that up to 5% errors could be merely rate-induced, that is simply a result of answering a little too fast. Given a little more time the student would have gotten it right. Therefore you could allow up to two errors on a timing without having much likelihood of passing students who did not know the correct answer. Wherever you set you goal, make it the same for the whole class. Either no errors allowed, one error allowed, or two.

Homework recommended. Any day that a student does not pass a set, we recommend requiring the student to take home the sheet they did not pass and practice the top half to improve their speed. At-home practice should be orally reciting the facts and the answers in the same manner as outlined in paired oral practice above. Once students have learned how to do that practice at school they would be ready to show someone at home how to help them in the same way. A very few minutes a day are all that would be required to make a big difference in student success. A sample parent letter, explaining the way to practice and the reasons for practicing can be found at the end of the teacher directions.

The goal for each student was initially established on the "What are your goals?" sheet. If a student exceeds that goal on any timing, the new "high score" becomes the goal. The student should meet or beat their goal (their previous best) in order to pass. If students stop before the

end of the 1 minute timing to avoid having their goal move upwards, move it up at least one problem anyway. Or you could have the student stay after class with you and do the test again while you watch to make sure they don't stop. Starting the program out by recognizing students whose goals have gone up is the best way to keep students moving ahead.

After the practice time on the top half of the sheet, the 1 minute timings should be conducted, either immediately or after a delay. If there is a delay it will be harder for students to pass, but they will know their facts better when they do pass. It is also possible to do two practice sessions at different times during the day, but still do only one test per day. Each student should enter their goal at the bottom of their practice sheet before beginning the timing.

Students should be reminded repeatedly that their goal is to meet or beat their goal on the bottom half of the practice sheet. A Rocket chart for recording progress is included. Either before or after each timing, the students should enter the date next to the number of the practice set they are being tested on. Each time each student "tries" to pass the timing he or she should enter the date of that try on the Rocket chart for the set they are working on. This chart should be stapled on the front side of their pocket folder. Remember: no one should go past six "tries" without intervention from you.

Whenever any student passes their 1 minute timing they will color in the appropriate square on the Rocket. When a student has passed, the next day the student will begin practice on the following practice sheet. To help increase motivation, be sure to enthusiastically give some special recognition to students who pass their 1 minute timing. Give students some additional recognition for passing. You can ask students who passed to stand up and take a bow or raise their hand. You can give certificates, such as those which follow these directions, to those who pass, or even have the principal give such certificates. Find some way to give extra recognition for their hard work. This is more important to the children in the upper elementary grades where they have already struggled for some time. They need a little extra motivation.

Two ways to conduct the daily 1 minute timing—orally or in writing.

Most commonly teachers conduct the daily timing in writing. While this provides a permanent record of student performance that you can correct, it uses up a sheet of paper every day for every student. This paper can be saved and all correcting eliminated if you will conduct oral timings.

Conducting oral timings. Answer keys are already available and you may have already copied them for paired oral practice. Remember to make the answer keys up in packets of all the sets for the operation. Do the same thing for the problems—stapling all the sheets together. Because students will not be "using up" the practice sheets, you can put the sheets together in booklets. Students will simply turn to the sheet containing the set they are working on and their partner will do the same in the answer key.

Students must be paired up. The student being tested says only the answers, and does not need to read the problem when being tested. The student checker would have the answer key turned to the correct page. Have students raise their hands when they and their partner are ready to begin. Time for one minute (or less if you are using one of the alternative length timings) while students say answers as quickly as they can.

Have checkers immediately hold up a finger for each error they hear. Optionally, they could say the correct answer. While being notified about an error when it happens will distract some children, it will eliminate arguments after the timing about how many errors were heard. If a student is too distracted by the notification of an error they will have an opportunity to redeem themselves tomorrow.

Do not be too concerned about whether the checkers occasionally miss an error. Errors ought to be very rare. Instead you want the students to focus on how far they had gotten when you called time. Partners ought to be able to agree upon what was the last answer stated when you said to stop. If the number answered exceeds the student's goal, then he/she has passed—provided there were not more than the allowed number of errors.

When the first timing is finished, you can have the students switch roles. As soon as they can get ready, start the second one-minute timing. With oral timings, student's partners can immediately tell them whether or not they passed. Have the students color in their rocket chart immediately upon finishing the timings. Be sure to give some extra recognition for those who have passed, such as standing up and taking a bow.

<u>Departmentalized settings:</u> Do not attempt to do written timings. With several groups each day the paperwork alone would be too cumbersome. Use the oral testing method described here instead. If each child has their own folder and a packet of the problem sheets and a packet

of the answer key it will be simple to manage. Children retrieve their own folder and return it—and otherwise everything they need is in the folder.

Conducting written timings. Have students hold their pencils up in the air when they are ready to start. Wait until all the pencils are in the air before you say to begin. If your clock has a second hand visible to all the children you can tell them they may begin when the second hand reaches the 12—that way all eyes are on the clock rather than on their paper. You time while students write. At the end collect the folders (along with the test papers) of *only* those children who claimed to have passed. You will have to check the tests for accuracy—but only of the students who claim to have passed. If they know they did not pass, then you don't have to check their paper until they do.

Typically teachers hand back the folders the next day with the next set of pages to practice on, unless the student did not actually pass.

All students will need a new practice sheet for the next day (except for students who are practicing and testing orally.) Students who passed their timings get the next set of facts in alphabetic sequence and students who did not pass get a clean copy of the same letter as before.

There are various ways to handle the distribution of sheets. At a minimum, you will need to create a set of lettered file folders so that the appropriate sheets can be organized and accessed. Children can learn to get the next sheet on their own some time during the day. Cooperative groups could send a representative up to collect sheets for the group. If you have some adult help, that person could put the appropriate sheets in each child's folder. You might also have a student monitor do that.

Since most students will take several tries before completing sheets you might reduce the traffic going to the files by having students collect 4, 5 or 6 copies of the page the first time. Then if a student does not pass the 1 minute timing they would not have to go to the folders to get a sheet. Or you can do the same thing if you must fill the folders.

Students who are stuck and don't pass within six tries. Something is wrong if any student can not pass a sheet within the six tries shown on the Rocket Chart. Do not allow this condition to persist. Intervene with one of the ideas below.

- If the student has never passed a timing, perhaps the child can't really write that fast. Try testing the student orally, where the student tells you the answers. Remember, in oral testing the student says only the answers—not the whole problem. If the student can orally answer at least 40 facts in one minute, then the student is satisfactorily fluent with those facts. The handwriting goals must be too high. Reset their goals at their previous best and let them pass on to the next set.
- The most frequent reason students do not progress is because the student does not practice the right way. In other words they will avoid saying the problems out loud or will skip the correction procedure when they are hesitant. Or they will simply go on after a hesitation or error rather than going back three problems and trying again to see if they are faster now. The remedy is to practice with them as recommended and see if that makes a difference. It often does. If it does help, arrange to see that they practice the right way consistently. You may have to change partners or watch over them daily until they start practicing the right way. Consider increasing motivation through more rewards and recognition to keep students practicing the right way.
- The student may not be trying because he/she is unmotivated. Watch to see if the student is doing practice correctly or giving the test their best effort. Most often this is a *result* of failing to succeed rather than a *cause*. Consider practicing with the student. Think about ways to increase student motivation, including use of student achievement awards and social recognition for success.
- Watch to see that the student is "on-task" throughout the timing. Some students fail to realize that looking up around the room during a timing will slow them down so much they won't pass. If a student really cannot stay on task for 60 seconds you might try cutting the goal and the time in half—give a 30 second timing with a goal cut in half as well. That may do the trick.
- If practicing with a student the right way doesn't make a big difference, then the student may be stuck because they are "in over their heads." The student has officially passed several sets without completely mastering them. This should not happen if students always have to meet or beat their previous best—but sometimes it happens anyway. The sign is that they have

- several facts in the set with which they are hesitant. You can tell just by watching over their shoulder as they complete a timing—there will be hesitation on several of the facts.
- The basic remedy for kids who are stuck is to back up the alphabet until you find a letter they can pass. You can either test back all at once or have the student move back one letter a day until they do pass after one day's practice. Get them a new Rocket Chart to start over. Once you find out where the student is successful, make sure their goals are as fast as they can write—that you're not letting them pass even though they are hesitant on some facts. If you announce this as policy ahead of time, fewer students will get to six tries without passing!

Warning: do not reduce the criteria to pass each sheet, as that will make it increasingly difficult for the student! They will not be learning each small set as well as they need to and you'll be adding more facts faster than they can handle. The cumulative task will get more and more difficult. Only reduce the criteria if the student simply cannot write that fast—otherwise they can learn all the facts to the same speed as they learned the first set.

PART III: HOW TO MONITOR STUDENT PROGRESS

(this doesn't teach a thing, just monitors progress!)

Weekly 2 minute timing

Once a week or once every two weeks have your students do a two-minute timing of all the facts. The purpose is to see if they are improving in their knowledge of the facts. On days when you do a two minute timing, do NOT do the regular practice sheets.

Students should be reminded repeatedly that their goal is simply to improve. You may tell students, "Everyone starts out in different places and we do not want you to compare yourself against anyone else. Just work to get better yourself. Your goal is to meet or beat your previous highest score." Whenever any student beats their previous high score recognize them in some manner and make sure they graph their results. Before you begin the timings, have students look on their graphs and see what their previous best was. Have them write that down as their goal—to meet or beat their previous best.

You can have all students do the same number timing, e.g., Timing 3. This will facilitate correcting their timings as well as refilling their folders. Do not provide a practice time, simply have students get ready by putting their pencils in the air and begin. You time while students write.

Note: Students who must answer orally can be paired. One student checks by looking at the answers while the other says the answers. The students then switch roles, while you conduct a second timing for the oral students, the others are correcting.

At the end of the timing have students exchange papers to correct the timings. If you have students in different operations you will have to make answer keys so that students can correct each others timings using their copy of the answer key. If everyone's on the same operation, then you can have them exchange papers and correct after the timing. [A great way to correct is to have the students read all the problems and say the correct answer together. That will give extra practice!]

When students have finished correcting they should enter the date and record their score (the number of problems they answered correctly) on their "Graph of progress." This graph

should be stapled on the back side of their pocket folder. Any student who beats their previous high score should be recognized in some manner. [Ideas include stickers, congratulations on the board, certificates or a note, either to the principal or home.]

PART IV: SEQUENCE OF INTRODUCING FACTS

Addition Facts Sequence

Memorization of addition facts can begin as early as first grade, provided students have already learned a strategy for figuring out the facts. Memorization of facts is NOT appropriate for students who are unable to accurately calculate simple facts by some method or another. I recommend drawing lines or counting fingers as a strategy. Counting on a number line works but unlike fingers, a number line is not always available. Touch math is between finger counting and fact memorization, it requires memorization but is much slower than memorized facts.

Set A.	2+1, 1+2,	3+1, 1+3	Set K.	6+2, 2+6,	9+9
Set B.	4+1, 1+4,	1+1	Set L.	7+2, 2+7,	4+7, 7+4
Set C.	5+1, 1+5	2+2	Set M.	8+2, 2+8,	6+8, 8+6
Set D.	6+1, 1+6,	3+3	Set N.	9+2, 2+9,	6+9, 9+6
Set E.	7+1, 1+7,	4+4	Set O.	4+3, 3+4,	6+7, 7+6
Set F.	8+1, 1+8,	5+5	Set P.	5+3, 3+5,	7+8, 8+7
Set G.	9+1, 1+9,	0+ any #	Set Q.	5+8, 8+5,	7+9, 9+7
Set H.	2+3, 3+2,	6+6	Set R.	6+3, 3+6,	5+9, 9+5
Set I.	4+2, 2+4,	7+7	Set S.	7+3, 3+7,	8+9, 9+8
Set J.	5+2, 2+5	8+8	Set T.	8+3, 3+8,	4+9, 9+4
			Set U.	9+3, 3+9,	5+7, 7+5
			Set V.	4+5, 5+4,	4+8, 8+4
			Set W.	4+6, 6+4,	5+6, 6+5
			Set V.	4+5, 5+4,	4+8, 8+4
			Set W.	4+6, 6+4,	5+6, 6+5

Subtraction Facts Sequence

Memorization of subtraction facts can begin as soon as addition facts are learned and the student has a strategy for figuring out subtraction facts. Memorization of facts is NOT appropriate for students who are unable to accurately calculate simple facts by some method or another. I recommend either 1) drawing lines and crossing out the number being subtracted or 2) counting up on the fingers.

Set A. Set B. Set C. Set D. Set E.	3-1, 3-2, 5-1, 5-4, 6-1, 6-5 7-1, 7-6, 8-1, 8-7,	4-1, 4-3 2-1 4-2 6-3 8-4
Set F.	9-1, 9-8,	10–5
Set G.	10-1, 10-9,	any # – 0
Set H.	5-3, 5-2,	12–6
Set I.	6-2, 6-4,	14–7
Set J.	7-2, 7-5	16–8
Set K.	8-2, 8-6,	18–9
Set L.	9-2, 9-7,	11–7, 11–4
Set M.	any number – it	self
Set N.	10-2, 10-8,	14–8, 14–6
Set O.	11-2, 11-9,	15–9, 15–6
Set P.	7-3, 7-4,	13–7, 13–6
Set Q. Set R. Set S. Set T. Set U. Set V. Set W. Set X.	8-3, 8-5, 13-8, 13-5, 9-3, 9-6, 10-3, 10-7, 11-3, 11-8, 12-3, 12-9, 9-5, 9-4, 10-6, 10-4,	15–8, 15–7 16–9, 16–7 14–9, 14–5 17–9, 17–8 13–9, 13–4 12–7, 12–5 12–8, 12–4 11–6, 11–5

Multiplication Facts Sequence

Memorization of multiplication facts can begin as early as third grade, provided students have already learned a strategy for figuring out multiplication facts. Memorization of facts is NOT appropriate for students who are unable to accurately calculate simple facts by some method or another. I recommend count-bys (2, 4, 6, 8, etc.) or successive addition as a strategy. Count-bys are useful only if students have already learned most of the count-by sequences.

Students in 5th grade and above who have not yet mastered addition or subtraction facts usually have developed a strategy for figuring these out on their fingers. Practice for such students should be focused on multiplication facts first, until those are mastered. Fluency with multiplication facts is extremely critical to fractions and later math skills, and cannot be easily done on one's fingers.

```
Set A.
              1 x any number
Set B.
              0 x any number
Set C.
              2 x 3, 3 x 2 2 x 2
Set D.
              2 \times 4, 4 \times 5 \times 2, 2 \times 5
              2,
Set E.
              6 x 2, 2 x 6 7 x 2, 2 x 7,
Set F.
              8 \times 2, 2 \times 8 \quad 9 \times 2, 2 \times 9
Set G.
              9 \times 3, 3 \times 9 \quad 9 \times 4, 4 \times 9
Set H.
              9 \times 5, 5 \times 9 \quad 3 \times 3
Set I.
              9 \times 6,6 \times 9 \quad 4 \times 4
Set J.
              9 \times 7, 7 \times 9 = 5 \times 5
Set K.
              9 \times 8,8 \times 9 \quad 6 \times 6
Set L.
              3 \times 4, 4 \times 3 \quad 7 \times 7
Set M.
              3 x 5, 5 x 3 8 x 8
              3 \times 6, 6 \times 3 \quad 9 \times 9
Set N.
Set O.
              3 \times 7, 7 \times 3 3 \times 8, 8 \times 3
Set P.
              7 x 8, 8 x 7 6 x 8, 8 x 6
Set Q.
              5 x 8, 8 x 5 4 x 8, 8 x 4
Set R.
              7 \times 6, 6 \times 7 7 \times 5, 5 \times 7
Set S.
              7 \times 4, 4 \times 7 \quad 6 \times 5, 5 \times 6
              5 x 4, 4 x 5 4 x 6, 6 x 4
Set T.
```

Division Facts Sequence

Memorization of division facts can begin as early as fourth grade, provided students have already memorized the multiplication facts and learned a strategy for figuring out division facts. Memorization of division facts is NOT appropriate for students who are unable to accurately calculate simple division facts by some method or another. I recommend circling groups of lines or successive subtraction as a strategy.

NOTE: The problems in Set G where a number is divided by a larger number are usually not found in facts practice. However, in long division we expect students to know that the "answer" is 0, and to put a zero in the quotient and continue working. So these problems give students a chance to practice that skill before encountering these problems in long division. So $8 \div 5 = 0$ and is not a typographical error. Here are examples of these problems:

$$\frac{0}{9)7}$$
 $\frac{0}{7)3}$ $\frac{0}{2)1}$ $\frac{0}{6)2}$ $\frac{0}{8)4}$

When such problems turn up in the middle of long division problems, they often are hard for students to answer. Having practice with these problems now will develop fluency in response to such problems. That fluency will assist in development of fluency in long division problems later.

1				
Set A.	1) any	number (1-9)	
Set B.	(1-9)	itself		
Set C.	2) 6	3)6	2)4	
Set D.	2) 8	4) 8	2) 10	5) 10
Set E.	2) 12	6) 12	2) 14	7) 14
Set F.	2) 16	8) 16	2) 18	9) 18
Set G.	(2-9)	0 any#les	s than div	visor
Set H.	9) 27	3) 27	9) 36	4) 36
Set I.	9) 45	5) 45	3) 9	
Set J.	9) 54	6) 54	4) 16	
Set K.	9) 63	7) 63	5) 25	
Set L.	9) 72	8) 72	6) 36	
Set M.	3) 12	4) 12	7) 49	
Set N.	3) 15	5) 15	8) 64	
Set O.	3) 18	6) 18	9) 81	
Set P.	3) 21	7) 21	3) 24	8) 24
Set Q.	8) 56	7) 56	8) 48	6) 48
Set R.	8) 40	5) 40	8) 32	4) 32
Set S.	7) 42	6) 42	7) 35	5) 35
Set T.	7) 28	4) 28	6) 30	5) 30

Set U.

4) 20

5) 20

4) 24

6) 24

Dear Parents,

This year my students are going to be spending time daily practicing and learning the math facts, beginning in the operation of ________. Our class will keep working on these facts until everyone knows all the facts in this operation instantly, without any pause before answering. We will be using a program called *Mastering Math Facts*. It will take only a few minutes each day of class time, but students will keep working until they have mastered all the facts. A fact is mastered when it can be answered instantly, without any pause. *Mastering Math Facts* is unique because it teaches only 2 facts and their inverses on each page. The program allows each child to go at his or her own pace, taking as many days to master those two facts as needed. Students are given an opportunity daily to show they have learned a set of facts by passing its test. Once students "pass" a set of facts, they color in the letter for that set on their "Rocket Chart."

You can help your child progress and learn faster by practicing at home the same set of facts your child is learning at school. Any day your child does not pass a set of facts he or she will have that day's practice sheet to bring home as homework. It will help a great deal if you will practice with your child for five minutes with that sheet.

Here's how we recommend you practice. Your child should have the top half of the day's practice sheet (without answers written in) in front of himself or herself. If the answers have been written in, then your child will need to write out the facts without answers on another sheet of paper, but copying the first row will be enough for practice purposes. Work only on the top half of the sheet.

Have your child read each fact aloud and then say the answers to you. If you hear either the slightest hesitation or an error on one of those facts, give your child some extra practice on that fact. The best way to give extra practice is to begin by immediately giving your child the correct answer, then ask him or her to repeat the problem and the answer once more. Next, back up three problems and have your child begin again. If there is no hesitation or mistake when the problem is reached this time, be sure to praise your child and let him or her continue.

Work until finishing the top half of the page, but no more than five minutes in one session. If you wish to do a second session, wait at least an hour, or try it again in the morning. When memorizing facts, two short sessions hours apart are far more helpful than one long session. Your child's hard work should pay off in "passing" within a very few days. Then the next set will be assigned and practice can begin again. Each practice and test sheet is cumulative, including all the facts learned so far.

Learning all the facts in a given operation is a lot of work, but future success in math is dependent upon knowing facts so well that the answers come automatically without much thinking. Especially in a world of calculators, being able to compute math facts mentally is needed just to know if the calculator answer is correct. You can also help by sharing with your child the importance of learning math facts. Thank you so much for your support of this critical learning goal. I will keep you notified of your child's success in this important task.

Sincerely,

How fast can you write?

Wait for my signal to begin. You will have 1 minute to copy the numbers shown in the corner of each box. Write as quickly as you can. Ready, set, go!

3	72	8	32	9	15	1
L	1	.!	1	1		7 boxes
94	7	00	12	28		62
94	'	80	2	28	0	63
						14 boxes
4	56	6	36	5	45	8
					<u> </u>	21 boxes
					Ţ	
27	3	81	9	55	1	64
!						
<u></u>	<u> </u>	<u>.</u>		.1	I	28 boxes
2	49	6	10	14	21	7
	49	6	18	4	21	7
35 boxes						
24	8	48	5	75	3	35
						42 boxes

Count how many boxes you completed.

GOAL SHEET—STANDARD ONE- MINUTE TIMING

What is your goal? It's to meet or beat your best score ever, each time.

To find a fair **starting** place find the number of boxes you copied in the column below. To find what your goals are for timings circle that entire row. You'll circle your goal for how many problems correct to pass a 15 second, a 1 minute timing, and an annual goal (how fast you should be when you know all the facts) in a 2 minute timing.

Boxes copied	15 sec. timing	1 minute timing	2 min. annual goal
24 or less	Place into Ma	ustering Numerals (to improve writing
25	6	23	46
26	6	24	48
27	6	25	50
28	7	26	52
29	7	27	54
30	7	28	56
31	8	29	58
32	8	30	60
33	8	31	62
34	9	32	64
35	9	33	66
36	9	34	68
37	10	35	70
38	10	36	72
39	10	37	74
40	10	38	76
41	10	39	78
42	10	40	80

Write your <u>STARTING</u> goals here. Remember, whenever you beat your goal, cross it out and write down your new "record score" as your new goal!

a 15– second timing?	 	 	
a 1 minute timing?			

How many problems do I need to complete to pass:

GOAL SHEET—ALTERNATIVE LENGTH TIMINGS

What are your goals? Your goal is to meet or beat your best score ever in each

timing. To find a fair <u>starting</u> place find the number of boxes you copied in the column below. To find what your goals are for timings circle that entire row. You'll circle your goal for how many problems correct to pass a 15 second, a 30 second, a 40 second, and a 45 second timing. Your teacher will choose a length of timing for everyone in the class.

Alternatives to the 1 minute timing

Afternatives to the 1 minute tilling				ute mining
Boxes copied	15 sec. timing	30 sec. timing ¹	40 sec. timing ²	45 sec. timing ³
24 or less	6	Place into <i>Ma</i>	stering Numerals 1	to improve writing
25	6	12	16	18
26	6	13	17	19
27	6	13	18	20
28 or 29	7	14	19	21
30	7	15	20	22
31	8	15	20	23
32	8	16	21	24
33	8	16	22	25
34 or 35	9	17	23	26
36	9	18	24	27
37	10	18	25	28
38 or 39	10	19	26	29
40 or 41	10	20	27	30
42	11	21	28	31
		······································	***************************************	f

Write your <u>STARTING</u> goals here. Remember, whenever you beat your goal, cross it out and write down your new "record score" as your new goal! How many problems correct do I need to pass:

a 15-second timing?	
a 30 second timing?	
a 40 second timing?	
a 45 second timing?	

¹ Excellent even for adults! Giving students 30 seconds to complete the one-minute timings will allow their goals to keep moving upwards until they can complete 40 problems in 30 seconds--a rate of 80 problems per minute—excellent even for adults!

Excellence for children: Giving students 40 seconds to do each timing allows goals to move up to a rate of 60 problems per minute.

³ More rigorous than the minimum. Giving students 45 seconds allows goals to move up to a rate of 53 problems per minute—a stronger rate than 40.

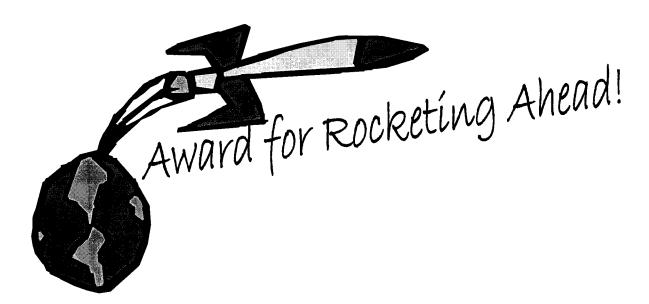
Mastering Math Facts



PRESENTED TO

Date	Signatur

Mastering Math Facts



Presented to

For awesome achievement in moving up the rocket chart!

Date Signature

Mastering Math Facts SUPER MATHEMATICIAN



Congratulations on going so fast! You beat your previous best score!

PRESENTED TO

Date	Signatur

Mastering Math Facts THANKS, HELPER!



RESENT	TED TO	
YOU	HELPED ME T	O LEARN FACTS
& M	OVE UP THE R	OCKET CHART!
FROM		
	Signature	Date

Where should I begin in Addition?

Test to pass Sets A - E

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

15 second timing Goal

Number of problems correct_____

Where should I begin in Addition?

Test to pass Sets ${f F}$ – ${f J}$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

15 second timing Goal _____

Where should I begin in Addition? Test to pass Sets $\,K\,-\,O\,$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

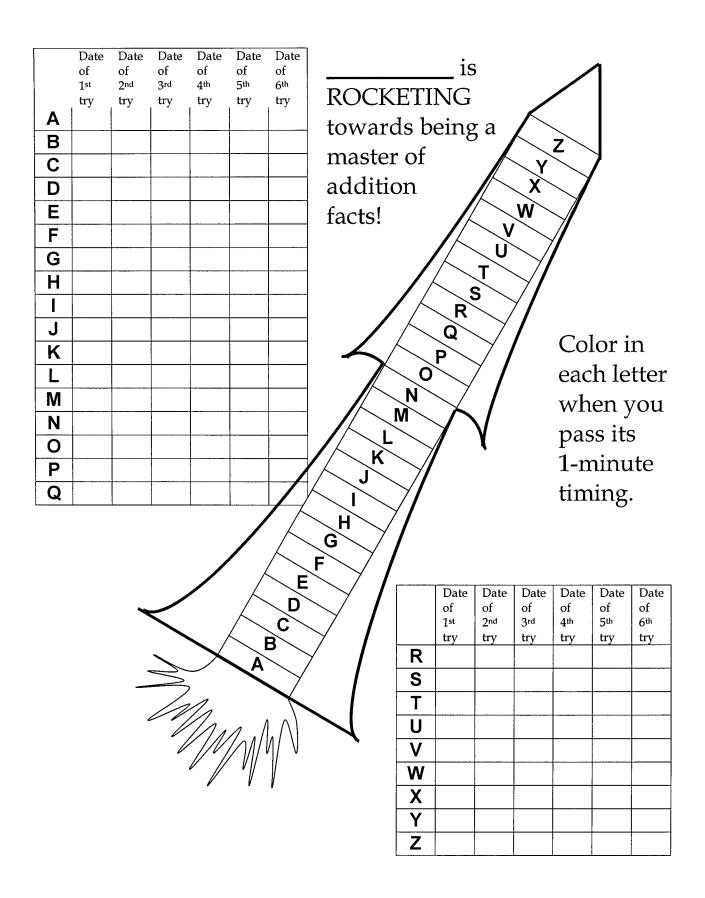
Goal _____

Number of problems correct_____

Where should I begin in Addition? Test to pass Sets ${f P}-{f W}$

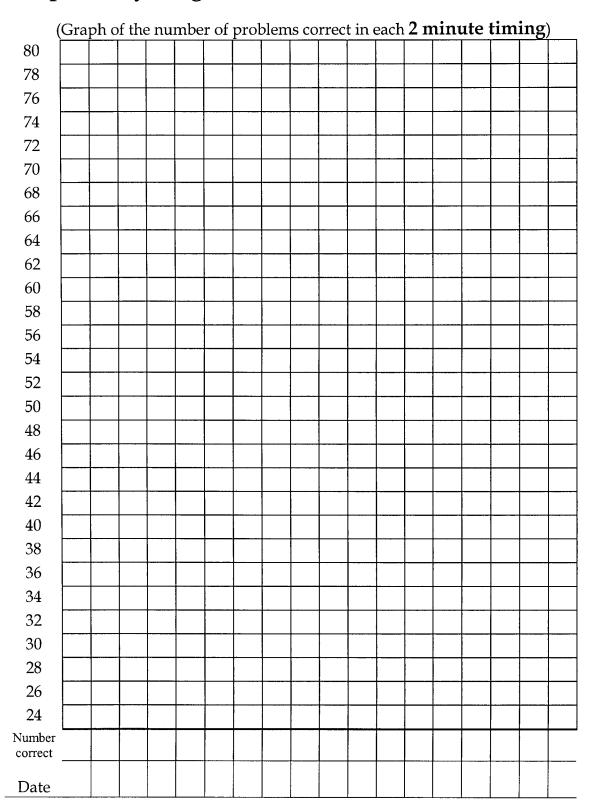
Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal ____



Graph of my Progress

Goal ____



Set A [1+2, 2+1, 1+3, 3+1] Practice on facts in Set ${f A}$

One Minute Timing on facts in Set A

1 minute timing goal _____

Set B [1+4, 4+1, 1+1] Practice on facts through Set ${f B}$

One Minute Timing on facts through Set B

1 minute timing goal _____

+4

+1

Number of problems correct____

+1

+3

+1

+4

+1

<u>+1</u>

<u>+2</u>

+1

Set C [1+5, 5+1, 2+2] Practice on facts through Set C

One Minute Timing on facts through Set C

1 minute timing goal _____

Set D [1+6, 6+1, 3+3] Practice on facts through Set **D**

<u>+3</u>

<u>+1</u>

+4

+6

+1

+1

One Minute Timing on facts through Set D

<u>+1</u>

+2

<u>+2</u>

<u>+5</u>

1 minute timing goal ___

Set E [1+7, 7+1, 4+4] Practice on facts through Set f E

One Minute Timing on facts through Set E

1 minute timing goal

Set F [1+8, 8+1, 5+5] Practice on facts through Set ${f F}$

One Minute Timing on facts through Set F

1 minute timing goal _____

Set G [1+9, 9+1, 0+ any number] Practice on facts through Set G

$$7$$
 1 9 8 2 3 1 1 2 3 $+1$ $+8$ $+1$ $+1$ $+2$ $+0$ $+1$ $+9$ $+1$ $+0$

One Minute Timing on facts through Set G

1 minute timing goal _____

Set H [2+3, 3+2, 6+6] Practice on facts through Set ${f H}$

One Minute Timing on facts through Set H

1 minute timing goal _____

Set I [4+2, 2+4, 7+7] Practice on facts through Set ${f I}$

One Minute Timing on facts through Set I

1 minute timing goal _____

Set J [5+2, 2+5, 8+8] Practice on facts through Set

One Minute Timing on facts through Set J

1 minute timing goal _____

Set K [6+2, 2+6, 9+9] Practice on facts through Set \mathbf{K}

One Minute Timing on facts through Set K

1 minute timing goal _____

Set L [7+2, 2+7, 4+7, 7+4] Practice on facts through Set L

One Minute Timing on facts through Set L

1 minute timing goal _____

Set M [8+2, 2+8, 8+6, 6+8] Practice on facts through Set \mathbf{M}

One Minute Timing on facts through Set M

1 minute timing goal _____

Set N [9+2, 2+9, 9+6, 6+9] Practice on facts through Set N

One Minute Timing on facts through Set N

1 minute timing goal

Set O [4+3, 3+4, 6+7, 7+6] Practice on facts through Set O

One Minute Timing on facts through Set O

1 minute timing goal _____

Set P [5+3, 3+5, 7+8, 8+7] Practice on facts through Set ${f P}$

+3

+9

<u>+2</u>

+6

+8

+4

+8

One Minute Timing on facts through Set P

+6

+5

+7

1 minute timing goal _____

Set Q [5+8, 8+5, 7+9, 9+7] Practice on facts through Set

8 3 7 7 3 5 5 7 9 2
$$+5 +4 +8 +9 +5 +8 +3 +6 +7 +9$$
5 4 9 8 6 8 7 6 7 3 $+8 +3 +7 +5 +7 +7 +9 +6 +8 +5$
7 3 7 9 5 8 2 7 8 5

One Minute Timing on facts through Set Q

1 minute timing goal _____

Set R [6+3, 3+6, 5+9, 9+5]

Practice on facts through Set ${f R}$

7

+8

3

4

+1

+7 +6

One Minute Timing on facts through Set R

6

<u>+6</u>

5

+0

3

+2

1 minute timing goal ___

Set S [7+3, 3+7, 8+9, 9+8] Practice on facts through Set S

One Minute Timing on facts through Set S

1 minute timing goal _____

Set T [8+3, 3+8, 4+9, 9+4] Prac

Practice on facts through Set T

<u>+4</u>

<u>+3</u>

<u>+3</u>

8 +5

One Minute Timing on facts through Set T

7

3

+1

<u>+6</u>

+9

<u>+8</u>

+2

1 minute timing goal ____

Set U [9+3, 3+9, 5+7, 7+5]

Practice on facts through Set f U

2

3

4

7

One Minute Timing on facts through Set U

4

5

+1

+5

2

1 minute timing goal _____

Set V [4+5, 5+4, 4+8, 8+4] Practice on facts through Set \mathbf{V}

One Minute Timing on facts through Set V

1 minute timing goal _____

Set W [4+6, 6+4, 5+6, 6+5] Practice on facts through Set \mathbf{W}

One Minute Timing on facts through Set W

1 minute timing goal _____

Set X Practice on facts through Set X

One Minute Timing on facts through Set X

1 minute timing goal _____

+8

2

+9

5

+7

Set Y Practice on facts through Set Y

One Minute Timing on facts through Set Y

1 minute timing goal _____

A-30

Name

Practice on facts through Set ${f Z}$ Set Z

9

<u>+5</u>

8

+5

4

+6

+6

5

+4

9

5

+4

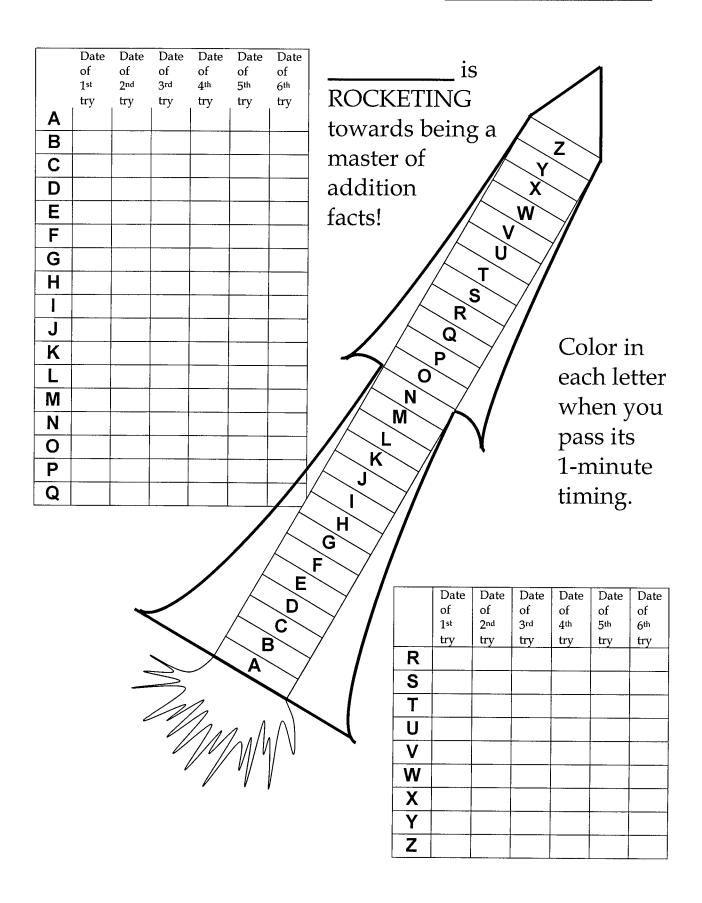
+6

One Minute Timing on facts through Set Z

+2

6

1 minute timing goal _____



Addition Two Minute Timing # 1 (do this weekly to check your progress)

Goal _____ Number of

Addition Two Minute Timing # 2 (do this weekly to check your progress)

Goal ____

Addition Two Minute Timing # 3 (do this weekly to check your progress)

$$7$$
 5 8 2 9 4 7 3 0 8 $+7$ $+8$ $+9$ $+6$ $+5$ $+0$ $+5$ $+3$ $+9$ $+4$

Goal _____ Number of problems correct_____

Addition Two Minute Timing #4 (do this weekly to check your progress)

$$5$$
 2 4 5 7 3 8 2 5 9 $+6$ $+5$ $+1$ $+9$ $+3$ $+6$ $+5$ $+8$ $+7$ $+3$

$$5$$
 8 6 4 7 4 8 3 0 7 $+3$ $+7$ $+9$ $+2$ $+2$ $+5$ $+1$ $+5$ $+3$ $+6$

Goal ____ Number

Addition Two Minute Timing # 5 (do this weekly to check your progress)

$$7 6 4 8 6 1 6 9 5 9$$

 $+4 +7 +3 +2 +3 +1 +2 +6 +4 +9$

Goal

Addition Two Minute Timing # 6 (do this weekly to check your progress)

$$7$$
 8 2 5 3 9 8 4 0 7 $+7$ $+9$ $+6$ $+8$ $+3$ $+5$ $+4$ $+0$ $+9$ $+5$

Goal

Addition Two Minute Timing #7 (do this weekly to check your progress)

$$7$$
 5 9 8 6 2 2 7 6 1 $+9$ $+5$ $+4$ $+3$ $+2$ $+1$ $+7$ $+8$ $+0$ $+3$

$$5$$
 7 3 8 5 4 9 2 5 2 $+9$ $+3$ $+6$ $+5$ $+6$ $+1$ $+3$ $+8$ $+7$ $+5$

Goal _____ Number of problems correct____

Addition Two Minute Timing #8 (do this weekly to check your progress)

Goal _____ Number of problems correct

Addition Two Minute Timing # 9 (do this weekly to check your progress)

Goal ___

Addition Two Minute Timing # 10 (do this weekly to check your progress)

Goal

Graph of my Progress

Goal

(Graph of the number of problems correct in each 2 minute timing)

80									
78									
76			 						
74									
72									
70									
68				 					
66									
64									
62									
60									
58									
56									
54									
52									
50									
48									
46									
44									
42									
40									
38									
36							·		
34									
32									
30									
28									
26								 	
24									
Number correct									
Date									

Where should I begin in Subtraction?

Test to pass Sets A - E

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal ____

Number of problems correct_____

Where should I begin in Subtraction?

Test to pass Sets F-J

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal

Where should I begin in Subtraction? Test to pass Sets $K\,-\,O$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal

Number of problems correct____

Where should I begin in Subtraction? Test to pass Sets ${\bf P}-{\bf W}$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

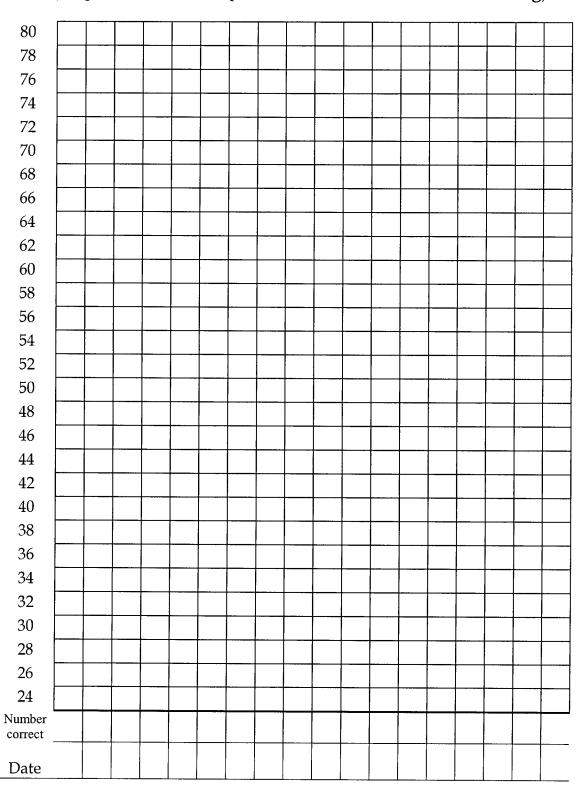
Goal

A B C D E F G H	Date of 1st try	Date of 2nd try	Date of 3rd try	Date of 4th try	Date of 5th try	Date of 6th try	ROCKETING towards being a master of subtraction facts!
J K L M N O P							Color in each letter when you pass its 1-minute timing.
					A A	(E/D/C)	Date

Graph of my Progress

Goal ____

(Graph of the number of problems correct in each 2 minute timing)



4

<u>-1</u>

Set A [3-2, 3-1, 4-3, 4-1] Practice on facts in Set **A**

One Minute Timing on facts in Set A

1 minute timing goal _____

Set B [5-4, 5-1, 2-1]

Practice on facts through Set ${f B}$

2

-1

2

<u>-1</u>

One Minute Timing on facts through Set B

<u>-2</u>

3

<u>-2</u>

-1

-4

-1

4

1 minute timing goal _____

Set C [6-1, 6-5, 4-2]

Practice on facts through Set f C

5 6 -1 <u>-4</u>

3 <u>-2</u>

2 4 <u>-1</u> <u>-2</u>

5 <u>-1</u>

3 -1

4 <u>-3</u>

6 <u>-5</u>

2 <u>-1</u>

6 <u>-5</u> 2

-1

5 <u>-1</u>

4 <u>-1</u>

4 <u>-3</u>

5

4 <u>-2</u> 3

4 <u>-3</u>

5

6

<u>-5</u>

6

<u>-1</u>

4

<u>-1</u>

4

<u>-2</u>

6

<u>-1</u>

6 <u>-1</u>

4 <u>-1</u> 5

3 <u>-1</u>

6 <u>-5</u>

4

2 <u>-1</u>

6 <u>-1</u>

4 <u>-2</u>

3 <u>-2</u>

6 <u>-5</u>

5 <u>-1</u>

6 -5

6 **-1**

3 <u>-2</u>

One Minute Timing on facts through Set C

6

4

6 <u>-5</u>

5 <u>-1</u>

5 <u>-4</u> 4

3 <u>-1</u>

6

3

6 <u>-1</u>

4

<u>-1</u>

3

<u>-2</u>

6 <u>-5</u>

5 -4

4 <u>-2</u>

4 <u>-1</u>

5 <u>-5</u> <u>-1</u>

6 -1

2 <u>-1</u>

3

-1

5

4

6 <u>-1</u>

4 <u>-2</u>

5

6 <u>-1</u> 5

6 <u>-5</u>

4 <u>-2</u>

2

<u>-1</u>

6

<u>-5</u>

5

5

<u>-1</u>

6 <u>-1</u>

6 <u>-5</u>

4 <u>-3</u>

4 <u>-2</u>

2 **-1** 5

1 minute timing goal _____

Set D [7-1, 7-6, 6-3]

Practice on facts through Set f D

<u>-6</u>

2

One Minute Timing on facts through Set D

2

-1

<u>-6</u>

2

<u>-2</u>

<u>-1</u>

1 minute timing goal _____

Set E [8-1, 8-7, 8-4] Practice on facts through Set f E

One Minute Timing on facts through Set E

1 minute timing goal _____

Set F [9-1, 9-8, 10-5]

Practice on facts through Set F

4

<u>-2</u>

<u>-1</u>

3

<u>-1</u>

<u>-2</u>

One Minute Timing on facts through Set F

<u>-8</u>

9

<u>-8</u>

10

-5

<u>-3</u>

7

<u>-6</u>

1 minute timing goal ____

Set G [10-1, 10-9, any #-0]

Practice on facts through Set G

<u>-1</u>

<u>-5</u>

<u>-1</u>

<u>-0</u>

<u>-1</u>

<u>-5</u>

10

<u>-9</u>

One Minute Timing on facts through Set G

10

-9

10

-1

7

<u>-0</u>

<u>-8</u>

-1

<u>-9</u>

<u>-1</u>

<u>-6</u>

-9

<u>-1</u>

<u>-2</u>

<u>-8</u>

Set H [5-3, 5-2, 12-6]

Practice on facts through Set ${f H}$

<u>-2</u>

7

<u>-1</u>

<u>-3</u>

<u>-1</u>

<u>-5</u>

<u>-7</u>

10

<u>-5</u>

10

5

<u>-2</u>

<u>-9</u>

5

<u>-3</u>

9

One Minute Timing on facts through Set H

6

<u>-5</u>

<u>-1</u>

<u>-6</u>

<u>-6</u>

<u>-5</u>

<u>-1</u>

<u>-1</u>

-6

<u>-1</u>

<u>-3</u>

<u>-2</u>

-1

<u>-2</u>

<u>-8</u>

1 minute timing goal _____

Set I [6-2, 6-4, 14-7]

Practice on facts through Set **I**

10

<u>-1</u>

<u>-9</u>

14

<u>-7</u>

6

12

One Minute Timing on facts through Set I

-1

<u>-3</u>

-6

-4

7

<u>-5</u>

<u>-1</u>

9

<u>-1</u>

<u>-6</u>

<u>-7</u>

<u>-8</u>

<u>-1</u>

<u>-9</u>

1 minute timing goal _____

Set J [7-2, 7-5, 16-8]

Practice on facts through Set

6

-6

<u>-5</u>

<u>-1</u>

<u>-1</u>

<u>-5</u>

7

<u>-1</u>

<u>-3</u>

<u>-8</u>

<u>-5</u>

One Minute Timing on facts through Set J

4

<u>-1</u>

7

-1

<u>-1</u>

<u>-5</u>

<u>-5</u>

<u>-2</u>

<u>-6</u>

<u>-8</u>

1 minute timing goal _____

Set K [8-2, 8-6, 18-9]

Practice on facts through Set K

7

<u>-5</u>

16

<u>-8</u>

18

<u>-9</u>

<u>-8</u>

8

<u>-6</u>

16

<u>-8</u>

10

<u>-1</u>

8

<u>-2</u>

<u>-7</u>

<u>-2</u>

<u>-5</u>

<u>-9</u>

<u>-8</u>

One Minute Timing on facts through Set K

6

-1

-6

<u>-1</u>

9

<u>-1</u>

-6

<u>-8</u>

-7

7

-5

8

7

<u>-1</u>

<u>-8</u>

1 minute timing goal _____

Set L [9-2, 9-7, 11-7, 11-4]

Practice on facts through Set $oldsymbol{L}$

<u>-2</u>

9

<u>-7</u>

6

<u>-4</u>

10

<u>-1</u>

11

<u>-7</u>

8

<u>-2</u>

<u>-6</u>

<u>-7</u>

<u>-7</u>

One Minute Timing on facts through Set L

4

<u>-3</u>

<u>-0</u>

<u>-8</u>

7

<u>-6</u>

<u>-1</u>

-1

1 minute timing goal _____

Set M [any number – itself]

Practice on facts through Set ${f M}$

<u>-3</u>

<u>-4</u>

<u>-8</u>

<u>-7</u>

18

<u>-9</u>

<u>-7</u>

<u>-4</u>

<u>-6</u>

<u>-7</u>

<u>-2</u>

<u>-5</u>

<u>-7</u>

One Minute Timing on facts through Set M

<u>-1</u>

14

4

<u>-2</u>

-0

8

3

1 minute timing goal _____

Set N [10-2, 10-8, 14-8, 14-6]

Practice on facts through Set N

-6

<u>-9</u>

<u>-7</u>

<u>-8</u>

<u>-4</u>

-4

<u>-2</u>

-7

One Minute Timing on facts through Set N

2

<u>-1</u>

7

<u>-1</u>

-8

<u>-7</u>

<u>-5</u>

<u>-2</u>

<u>-0</u>

<u>-8</u>

<u>-1</u>

<u>-6</u>

8

<u>-2</u>

<u>-1</u>

<u>-8</u>

<u>-8</u>

1 minute timing goal _____

Set O [11-2, 11-9, 15-9, 15-6]

Practice on facts through Set **O**

<u>-8</u>

<u>-8</u>

15

<u>-7</u>

One Minute Timing on facts through Set O

2

-1

7

<u>-1</u>

11

<u>-9</u>

-6

-1

-6

<u>-7</u>

<u>-8</u>

<u>-3</u>

<u>-1</u>

1 minute timing goal _____

Set P [7-3, 7-4, 13-7, 13-6]

Practice on facts through Set ${f P}$

<u>-8</u>

13

<u>-6</u>

<u>-7</u>

15

<u>-6</u>

<u>-7</u>

-8

<u>-9</u>

-6

One Minute Timing on facts through Set P

2

<u>-1</u>

-6

<u>-5</u>

-6

<u>-3</u>

<u>-7</u>

<u>-8</u>

<u>-2</u>

5

<u>-1</u>

1 minute timing goal

Set Q [8-3, 8-5, 15-8, 15-7]

Practice on facts through Set **Q**

-8

<u>-9</u>

<u>-3</u>

<u>-5</u>

<u>-7</u>

7

<u>-3</u>

11

-7

<u>-5</u>

-4

13

One Minute Timing on facts through Set Q

2

-7

<u>-5</u>

<u>-8</u>

<u>-5</u>

<u>-8</u>

<u>-8</u>

<u>-6</u>

6

8

<u>-7</u>

<u>-8</u>

<u>-6</u>

<u>-2</u>

1 minute timing goal _____

Set R [13-8, 13-5, 16-9, 16-7]

Practice on facts through Set ${f R}$

-6

13

-8

7

_0

-8

<u>-5</u>

<u>-6</u>

<u>-7</u>

<u>-9</u>

-8

<u>-9</u>

<u>-9</u>

2

-1

8

<u>-6</u>

<u>-5</u>

<u>-7</u>

<u>-8</u>

<u>-3</u>

<u>-6</u>

16

<u>-9</u>

7

-2

-4

-8

-0

1 minute timing goal ___

<u>-7</u>

Set S [9-3, 9-6, 14-9, 14-5]

Practice on facts through Set S

-9

15

-7

-8

7

-3

<u>-3</u>

9

<u>-3</u>

-5

5

-4

16

-9

13

<u>-5</u>

<u>-9</u>

<u>-8</u>

<u>-3</u>

<u>-7</u>

-7

7

<u>-0</u>

-6

<u>-9</u>

One Minute Timing on facts through Set S

<u>-9</u>

2

-1

-4

-5

<u>-7</u>

-7

<u>-1</u>

<u>-9</u>

<u>-3</u>

<u>-8</u>

<u>-7</u>

<u>-1</u>

-6

6

-3

<u>-7</u>

<u>-4</u>

<u>-8</u>

<u>-0</u>

<u>-2</u>

<u>-6</u>

1 minute timing goal _____

Set T [10-3, 10-7, 17-9, 17-8]

Practice on facts through Set T

<u>-8</u>

<u>-8</u>

10

-7

17

<u>-8</u>

13

-8

14

<u>-5</u>

<u>-3</u>

<u>-3</u>

<u>-7</u>

<u>-5</u>

10

<u>-7</u>

-3

9

-8

<u>-9</u>

One Minute Timing on facts through Set T

2

<u>-1</u>

8

15

<u>-4</u>

<u>-9</u>

<u>-3</u>

-6

-5

<u>-6</u>

-8

1 minute timing goal _____

Set U [11-3, 11-8, 13-9, 13-4]

Practice on facts through Set U

-6

11

<u>-3</u>

10

<u>-7</u>

<u>-3</u>

13

<u>-9</u>

<u>-7</u>

9

-5

<u>-8</u>

<u>-3</u>

10

15

<u>-6</u>

One Minute Timing on facts through Set U

<u>-1</u>

<u>-8</u>

<u>-7</u>

<u>-6</u>

8

<u>-7</u>

-7

<u>-4</u>

<u>-1</u>

<u>-9</u>

-5

<u>-5</u>

<u>-8</u>

-6

-4

1 minute timing goal

Set V [12-3, 12-9, 12-7, 12-5]

Practice on facts through Set **V**

<u>-9</u>

<u>-7</u>

-1

<u>-7</u>

<u>-3</u>

<u>-3</u>

17

-7

<u>-3</u>

10

6

-7

-0

<u>-8</u>

One Minute Timing on facts through Set V

12

<u>-5</u>

8

-9

<u>-4</u>

<u>-3</u>

<u>-7</u>

<u>-6</u>

<u>-4</u>

<u>-7</u>

1 minute timing goal _____

Set W [9-5, 9-4, 12-8, 12-4]

Practice on facts through Set f W

12

12

6

<u>-3</u>

<u>-7</u>

<u>-3</u>

<u>-5</u>

-0

<u>-8</u>

16

<u>-8</u>

12

<u>-5</u>

9

<u>-4</u>

16

-9

One Minute Timing on facts through Set W

<u>-8</u>

<u>-7</u>

<u>-9</u>

<u>-0</u>

<u>-6</u>

-4

<u>-1</u>

<u>-5</u>

<u>-8</u>

<u>-6</u>

<u>-6</u>

-4

1 minute timing goal _____

Set X [10-6, 10-4, 11-6, 11-5]

Practice on facts through Set X

12

-6

<u>-8</u>

$$\begin{array}{ccc}
10 & 12 \\
-4 & -7
\end{array}$$

<u>-5</u>

<u>-5</u>

-6

-5

-6

<u>-7</u>

<u>-6</u>

One Minute Timing on facts through Set X

16

10

<u>-4</u>

9

<u>-5</u>

11

-9

<u>-3</u>

-8

<u>-6</u>

<u>-5</u>

<u>-7</u>

<u>-9</u>

-0

-6

-1

<u>-5</u>

-3

<u>-4</u>

1 minute timing goal _____

Set Y [all previous sets]

Practice on facts through Set ${f Y}$

<u>-6</u>

<u>-5</u>

6

<u>-3</u>

<u>-4</u>

<u>-7</u>

10

-6

-6

-4

<u>-5</u>

One Minute Timing on facts through Set Y

<u>-6</u>

<u>-0</u>

<u>-9</u>

10

-8

9

<u>-5</u>

<u>-4</u>

<u>-3</u>

<u>-8</u>

<u>-1</u>

1 minute timing goal _____

Set Z [all previous sets]

Practice on facts through Set Z

10

-4

<u>-5</u>

<u>-6</u>

<u>-6</u>

<u>-0</u>

-4

<u>-3</u>

<u>-6</u>

<u>-5</u>

<u>-5</u>

<u>-7</u>

<u>-3</u>

-6

<u>-9</u>

One Minute Timing on facts through Set Z

<u>-4</u>

<u>-4</u>

<u>-3</u>

<u>-8</u>

<u>-7</u>

<u>-2</u>

<u>-9</u>

<u>-0</u>

<u>-6</u>

_1

<u>-2</u>

-6

<u>-9</u>

-4

1 minute timing goal _____

R Date Date Date Date Date of of of of of of of of 1st 2nd 3rd 4th 5th try try try try try try try	K Color in each let when y pass its 1-minur timing. B Color in each let when y pass its 1-minur timing.	A Date of 1st try A B C D E F G H I	Date of 2nd try	Date of 3rd try	Date of 4th try	Date of '5th try	Date of 6th try
P	P C Date Date Date Date Of Of Of Of Of Of Of O	K L M N					
Date Date	Date Date Date Date Date of of of of of of of of stry try try	Р					
	T U V W		•	<			C

Subtraction Two Minute Timing # 1 (do this weekly to check your progress)

9 12 9 11 14 11 10 10 7 11
$$-1$$
 -4 -2 -4 -7 -5 -8 -7 -4 -2

10 1 9 12 12 12 5 11 13 12
$$-1$$
 -1 -8 -8 -6 -9 -5 -9 -4 -7

Goal

Subtraction Two Minute Timing # 2 (do this weekly to check your progress)

12 10 1 9 12 12 5 11 13 12
$$-8$$
 -1 -1 -8 -6 -9 -5 -9 -4 -7

$$7 14 6 8 18 17 7 7 8 7$$
 $-6 -6 -5 -4 -9 -8 -2 -1 -2 -5$

Goal _____ Number of

Subtraction Two Minute Timing # 3 (do this weekly to check your progress)

12 12 5 10 1 9 12 11 13 12
$$-6 -9 -5 -1 -1 -8 -8 -9 -4 -7$$

Goal Number of

Subtraction Two Minute Timing # 4 (do this weekly to check your progress)

Goal

Subtraction Two Minute Timing # 5 (do this weekly to check your progress)

Goal

Subtraction Two Minute Timing # 6 (do this weekly to check your progress)

11 14 11 9 10 10 7 12 9 11
$$-4$$
 -7 -5 -1 -8 -7 -4 -4 -2 -2

$$7 18 17 14 7 7 8 6 8 7$$
 $-6 -9 -8 -6 -2 -1 -2 -5 -4 -5$

12 12 12 10 5 11 13 1 9 12
$$-8 -6 -9 -1 -5 -9 -4 -1 -8 -7$$

Goal ____

Subtraction Two Minute Timing # 7 (do this weekly to check your progress)

$$7$$
 12 9 14 9 11 11 10 11 10 -4 -4 -2 -7 -1 -5 -2 -8 -4 -7

Goal

S-39

Subtraction Two Minute Timing # 8 (do this weekly to check your progress)

Goal

Subtraction Two Minute Timing # 9 (do this weekly to check your progress)

10 12 12 13 1 9 12 5 12 11
$$-1$$
 -9 -7 -4 -1 -8 -6 -5 -8 -9

Goal

Subtraction Two Minute Timing # 10 (do this weekly to check your progress)

Goal Num

Graph of my Progress

Goal

(Graph of the number of problems correct in each 2 minute timing)

00		Γ	Г	 _		Γ		Γ	1				
80			ļ				 						
78													
76													
74													
72													
70													
68													
66	-												
64													
62													
60													
58													
56													
54													
52													
50											1811	 111	
48			ļ ——										
46				 					 				
44													
42													
40							 						
38					_								
36		 											
34													
32													
30		 										 	
28													
26													
24									 -				
Jumber													
correct							 			-			
Date	:												

Where should I begin in Multiplication?

Test to pass Sets A - F

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin, enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal

Number of problems correct_____

Where should I begin in Multiplication?

Test to pass Sets G - K

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal _____

Where should I begin in Multiplication?

Test to pass Sets $\,L\,-\,O\,$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

7	3	9	6	4	8	7	9 <u>x8</u>	7	3
<u>x9</u>	<u>x6</u>	<u>x9</u>	<u>x9</u>	<u>x3</u>	<u>x8</u>	<u>x3</u>	<u>x8</u>	<u>x7</u>	<u>x8</u>
5	7	6	9	3	6	8	8	9	3
<u>x3</u>	<u>x7</u>	<u>x3</u>	<u>x9</u>	<u>x7</u>	<u>x6</u>	<u>x8</u>	8 <u>x3</u>	<u>x7</u>	<u>x4</u>

Goal ____

Number of problems correct_____

Where should I begin in Multiplication?

Test to pass Sets P-T

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

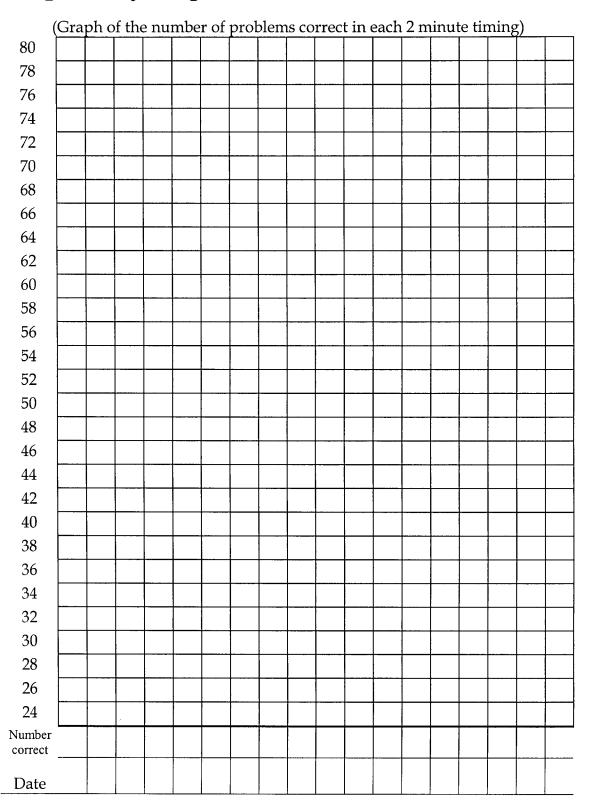
5 8 6 4 5 4 6 <u>x9</u> <u>x5</u> <u>x8</u> <u>x6</u> <u>x</u>7 x7 x7 x8 x6 x8

Goal _____ Number of problems correct_____

A	Date of 1 st try	Date of 2 nd try	Date of 3rd try	Date of 4 th try	Date of 5th try	Date of 6 th try
В						
С						
D						
E F						
G						
Н						
1						
J						
L						
M						
N	-					
		•	_	/		E/D/c
		*	<			_
		•	< <	/ >/	A A	C
				/		C
				/ //		C
						C
						C
						C

Graph of my Progress

Goal _____



Set A [1 x any number, any number x 1] Practice on facts in Set A

One Minute Timing on facts in Set A

1 minute timing goal _____

Set B [0 x any #, any # x 0] Practice on facts through Set B

One Minute Timing on facts through Set B

<u>x1</u>

<u>x8</u>

<u>x1</u>

1 minute timing goal _____

<u>x0</u>

<u>x6</u>

<u>x9</u>

<u>x2</u>

Number of problems correct_____

<u>x1</u>

<u>x1</u>

<u>x0</u>

Set C [2x3, 3x2, 2x2] Practice on facts through Set C

One Minute Timing on facts through Set C

1 minute timing goal _____

Set D [2x4, 4x2, 2x5, 5x2] Practice on facts through Set D

One Minute Timing on facts through Set D

1 minute timing goal _____

Set E [6x2, 2x6, 7x2, 2x7] Practice on facts through Set E

One Minute Timing on facts through Set E

2 2 2 7 1 4 5 1 8 <u>x7</u> <u>x3</u> <u>x1</u> <u>x6</u> <u>x0</u> <u>x2</u> <u>x1</u> <u>x6</u> <u>x2</u> <u>x0</u>

1 minute timing goal

Set F [8x2, 2x8, 9x2, 2x9] Practice on facts through Set F

One Minute Timing on facts through Set F

1 minute timing goal _____

Set G [9x3, 3x9, 9x4, 4x9] Practice on facts through Set G

One Minute Timing on facts through Set G

1 minute timing goal _____

Set H [9x5, 5x9, 3x3] Practice on facts through Set H

9 9 5 3 2 3 0 <u>x3</u> <u>x8</u> <u>x2</u> <u>x9</u> <u>x9</u> <u>x4</u> <u>x8</u> <u>x3</u> <u>x5</u> <u>x3</u>

One Minute Timing on facts through Set H

1 minute timing goal ______ Nur

Set I [9x6, 6x9, 4x4] Practice on facts through Set I

One Minute Timing on facts through Set I

1 minute timing goal _____

<u>x1</u>

<u>x4</u>

<u>x7</u>

<u>x1</u>

<u>x6</u>

<u>x1</u>

Number of problems correct_____

<u>x9</u>

<u>x8</u>

<u>x9</u>

<u>x2</u>

Set J [9x7, 7x9, 5x5] Practice on facts through Set J

One Minute Timing on facts through Set J

<u>x1</u>

<u>x3</u>

<u>x4</u>

1 minute timing goal _____

<u>x2</u>

<u>x1</u>

<u>x6</u>

x9

Number of problems correct_____

<u>x1</u>

<u>x9</u>

<u>x2</u>

Set K [9x8, 8x9, 6x6] Practice on facts through Set K

One Minute Timing on facts through Set K

1 minute timing goal ____

Set L [3x4, 4x3, 7x7] Practice on facts through Set L

One Minute Timing on facts through Set L

3 8 9 6 5 3 1 1 <u>x2</u> <u>x9</u> <u>x7</u> <u>x2</u> <u>x7</u> <u>x6</u> <u>x1</u> <u>x6</u> <u>x1</u> <u>x9</u>

1 minute timing goal

Set M [3x5, 5x3, 8x8] Practice on facts through Set M

One Minute Timing on facts through Set M

1 minute timing goal ____

Name_____

Set N [3x6, 6x3, 9x9] Practice on facts through Set N

One Minute Timing on facts through Set N

<u>x3</u>

<u>x6</u>

<u>x6</u>

<u>x9</u>

Number of problems correct____

<u>x1</u>

<u>x2</u>

<u>x7</u>

<u>x5</u>

1 minute timing goal _____

<u>x</u>2

<u>x2</u>

Set O [3x7, 7x3, 3x8, 8x3] Practice on facts through Set O

One Minute Timing on facts through Set O

<u>x3</u>

<u>x6</u>

<u>x6</u>

1 minute timing goal _____

Number of problems correct

<u>x1</u>

<u>x3</u>

<u>x4</u>

<u>x8</u>

Set P [7x8, 8x7, 6x8, 8x6] Practice on facts through Set P

One Minute Timing on facts through Set P

2 1 2 9 7 8 1 1 5 3 <u>x2</u> <u>x9</u> <u>x</u>7 <u>x7</u> <u>x8</u> <u>x6</u> <u>x6</u> <u>x1</u> <u>x1</u> <u>x2</u>

1 minute timing goal _____

Set Q [5x8, 8x5, 4x8, 8x4] Practice on facts through Set Q

One Minute Timing on facts through Set Q

1 minute timing goal _____

Set R [7x6, 6x7, 7x5. 5x7] Practice on facts through Set R

One Minute Timing on facts through Set R

1 minute timing goal ____

Set S [7x4, 4x7, 6x5, 5x6] Practice on facts through Set S

One Minute Timing on facts through Set S

<u>x4</u>

<u>x5</u>

<u>x6</u>

1 minute timing goal _____

<u>x</u>7

<u>x8</u>

<u>x9</u>

<u>x2</u>

Number of problems correct

1

<u>x1</u>

5

<u>x3</u>

3

<u>x2</u>

Name

Set T [5x4, 4x5, 4x6, 6x4] Practice on facts through Set T

One Minute Timing on facts through Set T

1 minute timing goal _____ Number of problems correct

<u>x4</u>

<u>x6</u>

<u>x6</u>

<u>x6</u>

<u>x1</u>

<u>x5</u>

<u>x7</u>

<u>x</u>2

<u>x9</u>

<u>x2</u>

Set U [all previous sets] Practice on facts through Set U

One Minute Timing on facts through Set U

<u>x4</u>

<u>x6</u>

<u>x9</u>

1 minute timing goal

<u>x7</u>

<u>x9</u>

<u>x7</u>

Number of problems correct____

<u>x4</u>

<u>x8</u>

<u>x8</u>

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Set V [all previous sets] Practice on facts through Set V

One Minute Timing on facts through Set V

110	IVIIII		******	OILLU	cto tili	.ougi	UCL	v	
7		7	5		3	_	4		7
<u>x8</u>	<u>x0</u>	<u>x6</u>	<u>x1</u>	<u>x5</u>	<u>x7</u>	<u>x6</u>		<u>x7</u>	<u>x5</u>
6	8	3	2	6	5	7	7	5	8
<u>x4</u>	<u>x5</u>	<u>x2</u>	<u>x3</u>		<u>x6</u>		<u>x3</u>	<u>x2</u>	<u>x2</u>
1	3	9	6	9	5	6	5	4	6
<u>x2</u>		<u>x5</u>	<u>x7</u>	<u>x3</u>	<u>x4</u>	<u>x8</u>	<u>x7</u>	<u>x4</u>	<u>x5</u>

1 minute timing goal _____

Number of problems correct____

<u>x7</u>

<u>x6</u>

<u>x0</u>

<u>x5</u>

Set W [all previous sets] Practice on facts through Set W

<u>x4</u>

One Minute Timing on facts through **Set W** 1 0 9 4 7 5 3 4 <u>x8</u> <u>x5</u> <u>x7</u> <u>x7</u> <u>x6</u> <u>x7</u> <u>x7</u> <u>x6</u> <u>x8</u> <u>x2</u>

3 0 5 6 3 8 3 7 5 <u>x2</u> <u>x6</u> <u>x3</u> <u>x4</u> <u>x5</u> $\times 4$ <u>x4</u> <u>x7</u> x4<u>x4</u>

6 8 5 6 2 3 4 3 5 4 <u>x</u>2 <u>x9</u> <u>x2</u> <u>x7</u> <u>x3</u> <u>x8</u> <u>x5</u> <u>x5</u> <u>x8</u> <u>x4</u>

8 7 9 6 7 8 5 2 6 3 <u>x6</u> <u>x5</u> <u>x</u>7 <u>x2</u> <u>x6</u> <u>x3</u> <u>x9</u> <u>x9</u> <u>x6</u> <u>x2</u>

1 minute timing goal

Number of problems correct

<u>x7</u>

<u>x8</u>

<u>x9</u>

A	Date of 1st try	Date of 2 nd try	Date of 3 rd try	Date of 4th try	Date of 5 th try	Date of 6 th try	is ROCKETING		
A B						-	towards being a	1	
C							master of	:	
D							multiplication /		
E							facts! W	}	
F							U V		
G						-		,	
H							/\s\//		
J							R		
K								Color i	n
L							0 / /	each le	tter
M							N	when y	you
N							\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	pass its	
				/		E	H G F	1-minutiming	
		•	/			\ D	Date Date Date	Date Date	
				\searrow		CB	of of of 3rd try try try	of of 5th try try	Date of 6 th try
				\rightarrow	A	C\	1st 2nd 3rd try try try O	of of 5th	of 6 th
		- 				C\	1st 2nd 3rd try try try O P	of of 5th	of 6 th
						C\	1st 2nd 3rd try try try O	of of 5th	of 6 th
		 				C\	1st 2nd 3rd try try try 0	of of 5th	of 6 th
		·				C\	1st 2nd 3rd try try try	of of 5th	of 6 th
		- -				C\	1st 2nd 3rd try try try 0 P Q R S T U	of of 5th	of 6 th
		- -				C\	1st 2nd 3rd try try try	of of 5th	of 6 th

Two Minute Multiplication Timing #1 (Do this weekly to see your progress)

Goal Number of problems correct Two Minute Multiplication Timing #2 (Do this weekly to see your progress)

Goal

x 4

<u>x 2</u>

Number of problems correct_____

<u>x 1</u>

<u>x 9</u>

<u>x 6</u>

<u>x 3</u>

<u>x 3</u>

<u>x 5</u>

<u>x 4</u>

<u>x 9</u>

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Two Minute Multiplication Timing #3 (Do this weekly to see your progress)

3

<u>x 5</u>

2

<u>x 1</u>

Goal

7

x 4

6

<u>x 3</u>

2

<u>x 2</u>

Number of problems correct_____

<u>x 4</u>

<u>x 9</u>

2

<u>x 6</u>

5

<u>x 3</u>

5

<u>x 9</u>

Two Minute Multiplication Timing #4 (Do this weekly to see your progress)

Goal

<u>x 5</u>

x 1

<u>x 9</u>

<u>x 6</u>

<u>x 4</u>

Number of problems correct

<u>x 2</u>

<u>x 4</u>

<u>x 9</u>

<u>x 3</u>

<u>x 3</u>

Two Minute Multiplication Timing #5 (Do this weekly to see your progress)

Number of problems correct Goal

Two Minute Multiplication Timing #6 (Do this weekly to see your progress)

Goal

<u>x</u> 3

<u>x 9</u>

Number of problems correct_____

<u>x 2</u>

<u>x 1</u>

<u>x 4</u>

<u>x 9</u>

<u>x 5</u>

<u>x 6</u>

<u>x 4</u>

<u>x 3</u>

Two Minute Multiplication Timing #7 (Do this weekly to see your progress)

2

<u>x 6</u>

6

<u>x 3</u>

Goal

5

<u>x 3</u>

5

x 9

7

<u>x 4</u>

Number of problems correct

2

<u>x 2</u>

2

<u>x 1</u>

3

x 4

x 5

7

<u>x 9</u>

Two Minute Multiplication Timing #8 (Do this weekly to see your progress)

4 <u>x 6</u>	7 <u>x 8</u>	3 <u>x 7</u>	2 <u>x 5</u>	5 <u>x 5</u>	0 <u>x 3</u>	9 <u>x 2</u>	0 <u>x 5</u>	3 <u>x 9</u>	
5 <u>x 1</u>	4 <u>x 9</u>			0 <u>x 4</u>		8 <u>x 2</u>		4 <u>x 3</u>	5 <u>x 2</u>
4 <u>x 2</u>	0 <u>x 7</u>			0 <u>x 8</u>		7 <u>x 3</u>			8 <u>x 7</u>
2 <u>x 9</u>	6 <u>x 4</u>	9 <u>x 3</u>				6 <u>x 8</u>	8 <u>x 9</u>	4 <u>x 7</u>	4 <u>x 1</u>
7 <u>x 6</u>	9 <u>x 5</u>	4 <u>x 8</u>		9 <u>x 9</u>		6 <u>x 7</u>	3 <u>x 3</u>		5 <u>x 4</u>
2 <u>x 4</u>	4 <u>x 5</u>	5 <u>x 8</u>	8 <u>x 1</u>	2 <u>x 8</u>			6 <u>x 6</u>	3 <u>x 6</u>	0 <u>x 9</u>
3 <u>x 8</u>	8 <u>x 6</u>	7 <u>x 2</u>	6 <u>x 5</u>		5 <u>x 9</u>		8 <u>x 4</u>	9 <u>x 6</u>	0 <u>x 5</u>
2	9	2	7	5	5	3	2	7	6

Goal _____

Number of problems correct_____

 $\underline{x6}$ $\underline{x4}$ $\underline{x2}$ $\underline{x4}$ $\underline{x3}$ $\underline{x9}$ $\underline{x5}$

 $\underline{x1}$ $\underline{x9}$ $\underline{x3}$

Two Minute Multiplication Timing #9 (Do this weekly to see your progress)

Goal

<u>x</u>3

<u>x 6</u>

Number of problems correct_____

<u>x 2</u>

x 1

<u>x 9</u>

<u>x 4</u>

<u>x 3</u>

<u>x 9</u>

<u>x 4</u>

<u>x 5</u>

Two Minute Multiplication Timing #10 (Do this weekly to see your progress)

Goal

Number of problems correct

Goal

Graph of my Progress Goal _____ (Graph of the number of problems correct in each 2 minute timing)

_	 											
80												
78												
76							 					
74	 											
72												
70												
68	·											
66												
64					 							
62												
60							 	.,	<u> </u>			
58												
56										 		
54												
52												
50					 							
48							 					
46					 		 -				 	
44					 							
42	•											
40	·						 					
38											 	
36												
34												
32												
30												
28												
26												
24	 											
Number						 						
correct			<u> </u>	<u> </u>								
Date												

Where should I begin in Division?

Test to pass Sets A - F

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin, enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

$$1\overline{)7}$$
 $8\overline{)16}$ $5\overline{)5}$ $2\overline{)18}$ $2\overline{)14}$ $9\overline{)18}$ $1\overline{)6}$ $2\overline{)16}$ $2\overline{)12}$ $2\overline{)8}$

$$7\overline{\smash)\,\,14}$$
 $2\overline{\smash)\,\,4}$ $3\overline{\smash)\,\,6}$ $6\overline{\smash)\,\,12}$ $5\overline{\smash)\,\,10}$ $1\overline{\smash)\,\,3}$ $2\overline{\smash)\,\,6}$ $4\overline{\smash)\,\,4}$ $4\overline{\smash)\,\,8}$ $2\overline{\smash)\,\,10}$

Goal

Number of problems correct_____

Where should I begin?

Test to pass Sets $\,G\,$ - $\,L\,$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal _____ Number of problems correct_____

Where should I begin?

Test to pass Sets $M\,-\,P$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

$$7)$$
 21 8) 4 5) 15 8) 24 4) 36 4) 12 8) 72 6) 1 9) 36 9) 54

Goal _____ Number of problems correct_____

Where should I begin?

Test to pass Sets Q-U

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

$$7)\overline{35}$$
 $8)\overline{56}$ $7)\overline{42}$ $4)\overline{28}$ $6)\overline{48}$ $8)\overline{40}$ $4)\overline{20}$ $4)\overline{32}$ $6)\overline{24}$ $6)\overline{30}$

$$6)\overline{42}$$
 $8)\overline{48}$ $5)\overline{40}$ $5)\overline{30}$ $7)\overline{56}$ $5)\overline{35}$ $8)\overline{32}$ $4)\overline{24}$ $5)\overline{20}$ $7)\overline{28}$

Goal _____ Number of problems correct_____

Α	Date of 1st try	Date of 2 nd try	Date of 3 rd try	Date of 4th try	Date of 5 th try	Date of 6 th try
B C						
D E						
F						
G H						
ı						
J K						
L						
M						
N O						
						E
		*	<	/		DC
		-	2	X	A	
				1		
		4		////	101	$\backslash \backslash \backslash$
						/// \
					V	V

Goal

Graph of my Progress Goal _____ (Graph of the number of problems correct in each 2 minute timing)

			1	T	T	 	 	 				
80											:	
78												
76												
74												
72												
70												
68								 			٠	
66								 	 			
64								 				
62												
60												
58												
56												
54												
52												
50												
48												
46												
44								 				
42										-		
40												
38												
36												
34												
32												
30												
28												
26												
24									 			
Number correct												
Date												

Name

Set A [1 divided into any number (1-9)]

Practice on facts in Set A

$$1\overline{\smash{\big)}\,5}$$
 $1\overline{\smash{\big)}\,9}$ $1\overline{\smash{\big)}\,3}$ $1\overline{\smash{\big)}\,7}$ $1\overline{\smash{\big)}\,4}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,4}$ $1\overline{\smash{\big)}\,8}$ $1\overline{\smash{\big)}\,9}$

$$1\overline{\smash{\big)}\,9}$$
 $1\overline{\smash{\big)}\,7}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,7}$ $1\overline{\smash{\big)}\,8}$ $1\overline{\smash{\big)}\,5}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,4}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,8}$

$$1\overline{\smash{\big)}\,9}$$
 $1\overline{\smash{\big)}\,9}$ $1\overline{\smash{\big)}\,5}$ $1\overline{\smash{\big)}\,7}$ $1\overline{\smash{\big)}\,2}$ $1\overline{\smash{\big)}\,8}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,1}$ $1\overline{\smash{\big)}\,5}$ $1\overline{\smash{\big)}\,3}$

$$1)6$$
 $1)3$ $1)5$ $1)4$ $1)3$ $1)5$ $1)4$ $1)6$ $1)7$ $1)9$

One Minute Timing on facts in Set A

$$1)\overline{5}$$
 $1)\overline{8}$ $1)\overline{3}$ $1)\overline{9}$ $1)\overline{4}$ $1)\overline{6}$ $1)\overline{5}$ $1)\overline{4}$ $1)\overline{8}$ $1)\overline{3}$

$$1) \overline{6} \qquad 1) \overline{7} \qquad 1) \overline{9} \qquad 1) \overline{7} \qquad 1) \overline{3} \qquad 1) \overline{5} \qquad 1) \overline{6} \qquad 1) \overline{4} \qquad 1) \overline{6} \qquad 1) \overline{8}$$

$$1)\overline{5}$$
 $1)\overline{3}$ $1)\overline{9}$ $1)\overline{8}$ $1)\overline{2}$ $1)\overline{4}$ $1)\overline{2}$ $1)\overline{1}$ $1)\overline{3}$ $1)\overline{2}$

$$1\overline{\smash{\big)}\,9}$$
 $1\overline{\smash{\big)}\,2}$ $1\overline{\smash{\big)}\,5}$ $1\overline{\smash{\big)}\,4}$ $1\overline{\smash{\big)}\,3}$ $1\overline{\smash{\big)}\,4}$ $1\overline{\smash{\big)}\,6}$ $1\overline{\smash{\big)}\,9}$ $1\overline{\smash{\big)}\,7}$ $1\overline{\smash{\big)}\,8}$

1 minute timing goal _____ Number of pro

Number of problems correct_____

Set B [any number (1-9) divided into itself]

Practice on facts in Set B

$$8)\overline{8}$$
 $6)\overline{6}$ $7)\overline{7}$ $1)\overline{5}$ $3)\overline{3}$ $1)\overline{1}$ $9)\overline{9}$ $1)\overline{4}$ $7)\overline{7}$ $9)\overline{9}$

$$1) \overline{9}$$
 $1) \overline{7}$ $6) \overline{6}$ $7) \overline{7}$ $8) \overline{8}$ $5) \overline{5}$ $\overline{6}$ $\overline{6}$ $\overline{4}$ $\overline{4}$ $\overline{6}$ $\overline{6}$ $\overline{1}) \overline{8}$

$$1)3$$
 $9)9$ $5)5$ $7)7$ $2)2$ $1)8$ $6)6$ $1)1$ $5)5$ $3)3$

$$1)6$$
 $3)3$ $5)5$ $1)4$ $1)3$ $9)9$ $4)4$ $6)6$ $1)7$ $8)8$

One Minute Timing on facts in Set B

$$1)\overline{5}$$
 $8)\overline{8}$ $1)\overline{3}$ $9)\overline{9}$ $4)\overline{4}$ $6)\overline{6}$ $5)\overline{5}$ $1)\overline{4}$ $8)\overline{8}$ $1)\overline{3}$

$$1)\overline{5}$$
 $3)\overline{3}$ $1)\overline{9}$ $8)\overline{8}$ $1)\overline{2}$ $1)\overline{4}$ $2)\overline{2}$ $6)\overline{6}$ $3)\overline{3}$ $1)\overline{2}$

$$1) \overline{9} \quad 2) \overline{2} \quad 1) \overline{5} \quad 4) \overline{4} \quad 1) \overline{3} \quad 3) \overline{3} \quad 1) \overline{6} \quad 9) \overline{9} \quad 7) \overline{7} \quad 1) \overline{8}$$

Set C [2 & 3 divided into 6, 2 divided into 4]

Practice on facts in Set C

$$7)7$$
 $1)5$ $3)3$ $9)9$ $3)6$ $2)4$ $7)7$ $9)9$

$$4\overline{)}\ \overline{4}$$

$$3)6$$
 $5)5$ $4)4$ $1)3$ $1)9$ $2)4$ $2)6$ $2)6$

One Minute Timing on facts in Set C

$$4\overline{)} \ 4$$

$$1)3$$
 9)9 4)4 2)6 5)5 1)4 1)8 1)3

$$7)7$$
 $1)6$ $7)7$ $3)3$ $5)5$ $1)6$ $1)4$ $2)6$

$$3)\overline{3}$$
 $1)\overline{9}$ $3)\overline{6}$ $2)\overline{2}$ $4)\overline{4}$ $2)\overline{4}$

$$2)\overline{4}$$
 $1)\overline{5}$ $4)\overline{4}$ $1)\overline{3}$ $3)\overline{6}$ $1)\overline{7}$ $1)\overline{9}$ $7)\overline{7}$

1 minute timing goal _____

Number of problems correct_____

Set D [2 & 4 divided into 8, 2 & 5 divided into 10]

Practice on facts in Set D

$$2)8$$
 $2)6$ $5)10$ $4)8$ $3)3$ $9)9$ $3)6$ $2)10$ $7)7$ $9)9$

$$1\overline{\smash{\big)}\,9}$$
 $7\overline{\smash{\big)}\,7}$ $2\overline{\smash{\big)}\,10}$ $2\overline{\smash{\big)}\,4}$ $2\overline{\smash{\big)}\,8}$ $5\overline{\smash{\big)}\,10}$ $2\overline{\smash{\big)}\,6}$ $2\overline{\smash{\big)}\,2}$ $3\overline{\smash{\big)}\,6}$ $4\overline{\smash{\big)}\,8}$

$$3)3$$
 $5)10$ $3)6$ $7)7$ $2)4$ $4)8$ $2)8$ $1)1$ $2)10$ $3)6$

$$2)\overline{4}$$
 $3)\overline{6}$ $5)\overline{10}$ $4)\overline{8}$ $1)\overline{3}$ $1)\overline{9}$ $2)\overline{10}$ $2)\overline{6}$ $2)\overline{8}$ $1)\overline{8}$

One Minute Timing on facts in Set D

$$2)\overline{4}$$
 $2)\overline{8}$ $1)\overline{3}$ $9)\overline{9}$ $4)\overline{4}$ $2)\overline{6}$ $5)\overline{5}$ $1)\overline{4}$ $4)\overline{8}$ $1)\overline{3}$

$$3) \overline{6}$$
 $7) \overline{7}$ $1) \overline{6}$ $7) \overline{7}$ $3) \overline{3}$ $5) \overline{10}$ $1) \overline{6}$ $1) \overline{4}$ $2) \overline{10}$ $8) \overline{8}$

$$1)5$$
 $3)3$ $1)9$ $3)6$ $2)8$ $4)4$ $2)4$ $6)6$ $5)10$ $1)2$

$$9) \overline{9}$$
 $2) \overline{10}$ $1) \overline{5}$ $4) \overline{8}$ $1) \overline{3}$ $3) \overline{6}$ $1) \overline{7}$ $1) \overline{9}$ $7) \overline{7}$ $2) \overline{6}$

D-9

Name

 $f Set \ E \ [2 \ and \ 6 \ divided \ into \ 12, \ 2 \ and \ 7 \ divided \ into \ 14]$

Practice on facts in Set E

$$2)\overline{12}$$
 $2)\overline{6}$ $5)\overline{5}$ $2)\overline{8}$ $7)\overline{14}$ $9)\overline{9}$ $4)\overline{8}$ $2)\overline{10}$ $6)\overline{12}$ $2)\overline{14}$

$$6\overline{)12}$$
 $1\overline{)7}$ $2\overline{)10}$ $2\overline{)14}$ $2\overline{)8}$ $5\overline{)10}$ $2\overline{)6}$ $2\overline{)12}$ $3\overline{)6}$ $7\overline{)14}$

$$2\overline{)14}$$
 $5\overline{)10}$ $6\overline{)6}$ $7\overline{)14}$ $6\overline{)12}$ $4\overline{)8}$ $2\overline{)12}$ $2\overline{)4}$ $2\overline{)10}$ $3\overline{)6}$

$$2)\overline{4}$$
 $7)\overline{14}$ $5)\overline{10}$ $4)\overline{8}$ $1)\overline{3}$ $6)\overline{12}$ $2)\overline{2}$ $2)\overline{8}$ $2)\overline{12}$ $2)\overline{14}$

One Minute Timing on facts in Set E

$$2)\overline{12}$$
 $2)\overline{8}$ $1)\overline{3}$ $9)\overline{9}$ $4)\overline{4}$ $2)\overline{14}$ $5)\overline{5}$ $1)\overline{4}$ $4)\overline{8}$ $1)\overline{3}$

$$3)\overline{6}$$
 $7)\overline{14}$ $1)\overline{6}$ $7)\overline{7}$ $6)\overline{12}$ $5)\overline{10}$ $1)\overline{6}$ $1)\overline{4}$ $2)\overline{10}$ $8)\overline{8}$

$$1\overline{)5}$$
 $3\overline{)3}$ $9\overline{)9}$ $3\overline{)6}$ $2\overline{)8}$ $4\overline{)4}$ $2\overline{)4}$ $6\overline{)12}$ $5\overline{)10}$ $1\overline{)2}$

$$2)\overline{14}$$
 $2)\overline{10}$ $5)\overline{5}$ $4)\overline{8}$ $1)\overline{3}$ $3)\overline{6}$ $1)\overline{7}$ $1)\overline{9}$ $2)\overline{12}$ $7)\overline{14}$

Name

Set F [2 and 8 divided into 16, 2 and 9 divided into 18]

Practice on facts in Set F

2) $\overline{12}$ 2) $\overline{16}$ 5) $\overline{5}$ 8) $\overline{16}$ 7) $\overline{14}$ 9) $\overline{18}$ 2) $\overline{18}$ 2) $\overline{8}$ 6) $\overline{12}$ 2) $\overline{14}$

 $2)\overline{6}$ 9) 18 2) 10 2) 14 2) 18 5) 10 2) 16 2) 12 8) 16 4) 8

 $1)\overline{4}$ $4)\overline{8}$ $8)\overline{16}$ $7)\overline{14}$ $6)\overline{12}$ $2)\overline{16}$ $2)\overline{12}$ $2)\overline{18}$ $2)\overline{10}$ $9)\overline{18}$

2) 18 7) 14 5) 10 9) 18 8) 16 6) 12 2) 16 2) 8 3) 6 2) 14

One Minute Timing on facts in Set F

2) 12 2) 18 1) 3 2) 16 4) 4 2) 14 5) 5 1) 4 9) 18 1) 3

 $3)\overline{6}$ $7)\overline{14}$ $2)\overline{18}$ $7)\overline{7}$ $6)\overline{12}$ $5)\overline{10}$ $1)\overline{6}$ $1)\overline{4}$ $2)\overline{10}$ $8)\overline{16}$

 $1\overline{\smash{\big)}\,5}$ $3\overline{\smash{\big)}\,3}$ $9\overline{\smash{\big)}\,18}$ $3\overline{\smash{\big)}\,6}$ $2\overline{\smash{\big)}\,8}$ $4\overline{\smash{\big)}\,4}$ $2\overline{\smash{\big)}\,16}$ $6\overline{\smash{\big)}\,12}$ $5\overline{\smash{\big)}\,10}$ $1\overline{\smash{\big)}\,2}$

 $2)\overline{14}$ $2)\overline{10}$ $5)\overline{5}$ $8)\overline{16}$ $1)\overline{3}$ $3)\overline{6}$ $2)\overline{18}$ $1)\overline{9}$ $2)\overline{12}$ $7)\overline{14}$

Set G [2-9 divided into any number less than the divisor = 0]

Practice on facts in Set G

$$2\overline{)1}$$
 $2\overline{)16}$ $4\overline{)1}$ $8\overline{)6}$ $8\overline{)16}$ $9\overline{)18}$ $2\overline{)18}$ $8\overline{)8}$ $6\overline{)3}$ $6\overline{)12}$

$$3)2$$
 9) 18 2) 10 2) 14 3) 2 7) 14 7) 6 2) 12 8) 16 7) 4

$$1)\overline{4}$$
 $4)\overline{2}$ $8)\overline{5}$ $7)\overline{14}$ $6)\overline{12}$ $2)\overline{16}$ $6)\overline{2}$ $2)\overline{1}$ $2)\overline{18}$ $9)\overline{18}$

$$2) \overline{18}$$
 $2) \overline{14}$ $5) \overline{4}$ $9) \overline{7}$ $8) \overline{16}$ $5) \overline{3}$ $2) \overline{16}$ $5) \overline{4}$ $3) \overline{6}$ $2) \overline{12}$

One Minute Timing on facts in Set G

$$2)1$$
 $2)8$ $1)3$ $2)16$ $4)4$ $2)14$ $5)5$ $1)4$ $9)5$ $1)3$

$$2)\overline{14}$$
 $2)\overline{10}$ $5)\overline{4}$ $8)\overline{16}$ $1)\overline{3}$ $3)\overline{6}$ $2)\overline{18}$ $1)\overline{9}$ $6)\overline{3}$ $7)\overline{14}$

 $f Set\ H$ [9 and 3 divided into 27, 9 and 4 divided into 36]

Practice on facts in Set H

 $4)\overline{36}$ $2)\overline{16}$ $9)\overline{27}$ $8)\overline{4}$ $8)\overline{6}$ $9)\overline{8}$ $7)\overline{4}$ $9)\overline{36}$ $3)\overline{27}$ $6)\overline{12}$

3) 2 9) 36 2) 18 9) 18 3) 27 4) 36 9) 27 5) 10 8) 16 7) 4

 $1)\overline{4}$ 9) 27 8) 5 4) 36 6) 5 2) 16 3) 27 2) 1 2) 18 9) 36

2) 1 2) 2 3) 27 9) 27 8) 16 5) 3 4) 36 5) 4 9) 36 9) 18

One Minute Timing on facts in Set H

 $2\overline{)1}$ $2\overline{)8}$ $1\overline{)3}$ $2\overline{)16}$ $4\overline{)36}$ $2\overline{)14}$ $5\overline{)5}$ $1\overline{)4}$ $9\overline{)27}$ $1\overline{)3}$

 $9)\overline{36}$ $7)\overline{14}$ $2)\overline{18}$ $7)\overline{7}$ $3)\overline{27}$ $5)\overline{10}$ $1)\overline{6}$ $1)\overline{4}$ $2)\overline{10}$ $8)\overline{6}$

1) 5 3) 3 9) 27 7) 6 2) 8 4) 2 2) 16 6) 12 9) 36 1) 2

 $4)\overline{36}$ $2)\overline{10}$ $5)\overline{4}$ $3)\overline{27}$ $1)\overline{3}$ $3)\overline{6}$ $2)\overline{18}$ $1)\overline{9}$ $6)\overline{3}$ $7)\overline{14}$

Set I [9 divided into 45, 5 divided into 45, 3 divided into 9]

Practice on facts in Set I

$$4)\overline{36}$$
 $2)\overline{1}$ $9)\overline{27}$ $3)\overline{9}$ $9)\overline{45}$ $9)\overline{8}$ $5)\overline{45}$ $9)\overline{18}$ $3)\overline{27}$ $6)\overline{12}$

$$1)\overline{4}$$
 9) 27 3) 9 4) 3 5) 45 5) 10 3) 27 9) 45 2) 10 9) 36

One Minute Timing on facts in Set I

$$9)\overline{36}$$
 $7)\overline{14}$ $2)\overline{18}$ $7)\overline{7}$ $3)\overline{27}$ $5)\overline{10}$ $5)\overline{45}$ $1)\overline{4}$ $2)\overline{10}$ $8)\overline{6}$

$$9)\overline{45}$$
 $3)\overline{9}$ $9)\overline{27}$ $7)\overline{6}$ $2)\overline{8}$ $4)\overline{2}$ $2)\overline{16}$ $6)\overline{12}$ $9)\overline{36}$ $1)\overline{2}$

Set J [9 and 6 divided into 54, 4 divided into 16]

Practice on facts in Set J

$$4)\overline{4}$$
 $4)\overline{16}$ $9)\overline{36}$ $3)\overline{9}$ $9)\overline{45}$ $9)\overline{54}$ $5)\overline{10}$ $9)\overline{18}$ $3)\overline{9}$ $6)\overline{54}$

$$4) \overline{16}$$
 9) $\overline{27}$ 6) $\overline{54}$ 9) $\overline{54}$ 5) $\overline{45}$ 2) $\overline{16}$ 3) $\overline{27}$ 9) $\overline{45}$ 2) $\overline{10}$ 9) $\overline{9}$

One Minute Timing on facts in Set J

$$2)\overline{1}$$
 $2)\overline{8}$ $1)\overline{3}$ $4)\overline{16}$ $4)\overline{36}$ $2)\overline{14}$ $9)\overline{54}$ $1)\overline{4}$ $9)\overline{27}$ $9)\overline{45}$

$$9)\overline{36}$$
 $7)\overline{14}$ $2)\overline{18}$ $7)\overline{7}$ $3)\overline{27}$ $5)\overline{10}$ $5)\overline{45}$ $6)\overline{54}$ $2)\overline{10}$ $8)\overline{6}$

Name_____

 $\mathbf{Set}\;\mathbf{K}\;$ [9 and 7 divided into 63, 5 divided into 25]

Practice on facts in Set K

$$7)63$$
 9) 27 5) 25 9) 9 5) 45 2) 16 9) 63 9) 45 2) 10 1) 9

One Minute Timing on facts in Set K

$$2)\overline{1}$$
 $5)\overline{25}$ $1)\overline{3}$ $4)\overline{16}$ $9)\overline{63}$ $2)\overline{12}$ $6)\overline{54}$ $1)\overline{4}$ $9)\overline{27}$ $9)\overline{45}$

Name_____

Set L [9 and 8 divided into 72, 6 divided into 36]

Practice on facts in Set L

8) 72 4) 16 9) 63 6) 36 7) 63 9) 72 5) 5 9) 54 3) 9 6) 54

6) 36 9) 36 2) 18 9) 45 3) 27 7) 63 8) 72 5) 25 4) 3 9) 72

7) 63 6) 12 5) 25 9) 72 6) 36 4) 16 9) 63 9) 27 8) 72 1) 9

9) 63 6) 54 3) 3 9) 8 8) 72 5) 25 9) 72 5) 45 6) 36 9) 54

One Minute Timing on facts in Set L

2) 1 5) 10 1) 3 4) 16 9) 63 8) 72 6) 54 1) 4 9) 45 9) 72

9) 45 7) 14 4) 8 9) 63 3) 27 5) 25 5) 45 8) 72 2) 10 8) 6

 $9)\overline{36}$ $3)\overline{9}$ $9)\overline{72}$ $7)\overline{7}$ $2)\overline{8}$ $4)\overline{2}$ $7)\overline{63}$ $6)\overline{12}$ $6)\overline{36}$ $1)\overline{2}$

 $4) \overline{16}$ $2) \overline{10}$ $5) \overline{25}$ $7) \overline{63}$ $1) \overline{3}$ $6) \overline{36}$ $2) \overline{18}$ $3) \overline{9}$ $9) \overline{9}$ $7) \overline{14}$

Set M [3 and 4 divided into 12, 7 divided into 49]

Practice on facts in Set M

8) 72 4) 12 9) 63 6) 36 7) 49 9) 72 3) 12 9) 8 3) 9 6) 54

6) 36 8) 16 2) 10 3) 12 3) 27 7) 63 8) 72 5) 25 4) 12 7) 49

 $7)\overline{63}$ $3)\overline{12}$ $5)\overline{25}$ $4)\overline{12}$ $7)\overline{49}$ $4)\overline{16}$ $9)\overline{63}$ $9)\overline{72}$ $8)\overline{72}$ $1)\overline{9}$

 $4)\overline{36}$ $4)\overline{12}$ $3)\overline{3}$ $9)\overline{54}$ $8)\overline{72}$ $7)\overline{49}$ $9)\overline{72}$ $3)\overline{12}$ $6)\overline{36}$ $9)\overline{18}$

One Minute Timing on facts in Set M

 $2)\overline{10}$ $5)\overline{10}$ $1)\overline{3}$ $4)\overline{12}$ $9)\overline{63}$ $8)\overline{6}$ $\overline{6)54}$ $\overline{1)4}$ $7)\overline{49}$ $9)\overline{72}$

9) 45 7) 14 4) 8 9) 63 3) 12 5) 25 5) 45 8) 72 2) 1 8) 72

 $9)\overline{36}$ $3)\overline{9}$ $9)\overline{72}$ $7)\overline{7}$ $2)\overline{8}$ $4)\overline{12}$ $7)\overline{63}$ $6)\overline{12}$ $6)\overline{36}$ $1)\overline{2}$

7) 49 2) 10 5) 25 7) 63 1) 3 6) 36 2) 18 3) 12 9) 9 7) 14

Set N [3 and 5 divided into 15, 8 divided into 64]

Practice on facts in Set N

One Minute Timing on facts in Set N

Set O [3 and 6 divided into 18, 9 divided into 81]

Practice on facts in Set O

$$6) \overline{18}$$
 $4) \overline{12}$ $9) \overline{9}$ $3) \overline{18}$ $7) \overline{49}$ $9) \overline{72}$ $3) \overline{15}$ $9) \overline{81}$ $5) \overline{15}$ $6) \overline{5}$

One Minute Timing on facts in Set O

$$8)\overline{3}$$
 $5)\overline{25}$ $1)\overline{3}$ $4)\overline{12}$ $3)\overline{18}$ $8)\overline{6}$ $6)\overline{36}$ $1)\overline{4}$ $7)\overline{49}$ $9)\overline{81}$

Set P [3 and 7 divided into 21, 3 and 8 divided into 24]

Practice on facts in Set P

7) 21 4) 3 3) 24 3) 18 3) 21 1) 9 3) 15 9) 81 8) 64 8) 24

1) 6 3) 21 9) 81 8) 24 7) 21 6) 18 3) 18 5) 15 3) 24 7) 49

3) 15 3) 24 3) 18 4) 12 8) 24 6) 18 7) 14 9) 72 3) 21 7) 21

6) 18 8) 64 8) 24 3) 21 3) 18 5) 15 7) 21 2) 6 9) 81 3) 24

One Minute Timing on facts in Set P

8) 16 5) 25 1) 3 4) 12 3) 18 8) 6 3) 21 1) 4 7) 49 9) 81

8) 24 6) 36 4) 12 9) 72 3) 12 3) 24 5) 45 8) 72 7) 21 8) 64

3) 21 8) 24 9) 63 7) 7 2) 8 4) 8 7) 63 6) 12 8) 3 9) 72

5) 15 2) 6 5) 10 7) 63 1) 3 6) 18 7) 21 3) 12 3) 24 7) 14

 $\mathbf{Set}\ \mathbf{Q}\ [8\ \mathrm{and}\ 7\ \mathrm{divided}\ \mathrm{into}\ 56,\ 8\ \mathrm{and}\ 6\ \mathrm{divided}\ \mathrm{into}\ 48]$

Practice on facts in Set Q

 $8)\overline{48}$ $6)\overline{18}$ $6)\overline{48}$ $7)\overline{56}$ $3)\overline{21}$ $1)\overline{9}$ $3)\overline{18}$ $8)\overline{56}$ $8)\overline{24}$ $3)\overline{24}$

6) 6 8) 56 9) 81 8) 48 7) 21 6) 18 3) 21 7) 56 3) 24 6) 48

 $6)\overline{48}$ 3) 24 3) 18 8) 56 8) 24 7) 56 7) 14 9) 72 8) 48 7) 21

2) 18 7) 56 8) 24 7) 21 8) 48 5) 15 3) 21 8) 56 9) 81 6) 48

One Minute Timing on facts in Set Q

 $8)\overline{56}$ $5)\overline{25}$ $1)\overline{3}$ $4)\overline{12}$ $6)\overline{48}$ $8)\overline{6}$ $3)\overline{21}$ $1)\overline{4}$ $7)\overline{49}$ $9)\overline{81}$

8) 48 6) 36 4) 12 9) 72 3) 12 3) 24 5) 45 7) 56 7) 21 8) 64

3) 21 8) 24 9) 63 8) 56 2) 8 4) 8 7) 63 8) 48 8) 3 9) 72

 $6)\overline{48}$ $2)\overline{6}$ $5)\overline{10}$ $7)\overline{56}$ $1)\overline{3}$ $6)\overline{18}$ $7)\overline{21}$ $3)\overline{12}$ $3)\overline{24}$ $7)\overline{14}$

Set R [8 and 5 divided into 40, 8 and 4 divided into 32]

Practice on facts in Set R

 $5)\overline{40}$ $8)\overline{24}$ $7)\overline{56}$ $4)\overline{32}$ $8)\overline{32}$ $1)\overline{9}$ $3)\overline{18}$ $8)\overline{40}$ $8)\overline{48}$ $3)\overline{24}$

 $6)\overline{6}$ 8) $\overline{56}$ 9) $\overline{81}$ 5) $\overline{40}$ 8) $\overline{40}$ 6) $\overline{48}$ 3) $\overline{21}$ 7) $\overline{56}$ 4) $\overline{32}$ 8) $\overline{32}$

8) 48 8) 40 4) 32 8) 56 6) 48 5) 40 8) 24 3) 24 8) 32 7) 21

7) 21 4) 32 5) 40 6) 48 8) 48 8) 32 3) 21 8) 56 8) 40 7) 56

One Minute Timing on facts in Set R

 $8)\overline{32}$ $5)\overline{45}$ $1)\overline{3}$ $4)\overline{12}$ $6)\overline{48}$ $8)\overline{40}$ $3)\overline{21}$ $4)\overline{4}$ $7)\overline{49}$ $9)\overline{81}$

5) 40 6) 36 4) 32 9) 72 3) 12 3) 24 5) 25 7) 56 7) 21 8) 64

3) 21 8) 24 1) 7 8) 56 2) 8 4) 32 7) 63 8) 40 8) 3 9) 72

 $6)\overline{48}$ $2)\overline{6}$ $5)\overline{10}$ $8)\overline{32}$ $1)\overline{3}$ $6)\overline{18}$ $7)\overline{21}$ $3)\overline{12}$ $5)\overline{40}$ $7)\overline{14}$

Name_____

Set S [7 and 6 divided into 42, 7 and 5 divided into 35]

Practice on facts in Set S

7) 56 7) 35 7) 42 4) 32 8) 32 6) 42 5) 35 8) 40 8) 48 1) 3

6) 42 8) 56 9) 81 5) 40 5) 35 6) 48 3) 21 7) 35 7) 42 8) 32

7) 42 8) 40 4) 32 5) 35 8) 48 5) 40 6) 48 7) 35 6) 42 7) 56

7) 14 5) 35 5) 40 7) 35 8) 56 8) 32 6) 42 4) 32 8) 40 7) 42

One Minute Timing on facts in Set S

 $7)\overline{35}$ $5)\overline{45}$ $7)\overline{14}$ $4)\overline{12}$ $6)\overline{48}$ $8)\overline{8}$ $3)\overline{21}$ $1)\overline{4}$ $7)\overline{42}$ $9)\overline{81}$

5) 35 6) 36 4) 32 9) 72 3) 12 3) 24 5) 25 6) 42 7) 21 8) 64

3) 21 7) 42 1) 7 8) 56 2) 8 4) 32 6) 42 8) 40 8) 3 7) 35

 $6)\overline{48}$ $2)\overline{6}$ $5)\overline{10}$ $8)\overline{32}$ $1)\overline{3}$ $6)\overline{18}$ $7)\overline{21}$ $5)\overline{35}$ $5)\overline{40}$ $7)\overline{14}$

6) 30

7) 14

5) 35

Set T [7 and 4 divided into 28, 6 and 5 divided into 30]

Practice on facts in Set T

6) 42

8) 32

5) 30

5) 40

4) 28

7) 42

One Minute Timing on facts in Set T

7) 28

1 minute timing goal _____

Number of problems correct_____

Name____

Set U [4 and 5 divided into 20, 6 and 4 divided into 24]

Practice on facts in Set U

 $7)\overline{28}$ $7)\overline{35}$ $7)\overline{42}$ $4)\overline{20}$ $6)\overline{24}$ $6)\overline{30}$ $5)\overline{20}$ $1)\overline{4}$ $5)\overline{35}$ $4)\overline{24}$

6) 30 4) 20 4) 28 4) 24 6) 42 6) 24 3) 21 5) 20 7) 28 5) 30

6) 24 4) 28 4) 24 7) 35 6) 30 5) 20 4) 36 5) 30 4) 20 7) 42

4) 24 5) 20 4) 20 7) 28 6) 42 8) 8 5) 30 5) 35 4) 28 6) 24

One Minute Timing on facts in Set U

 $6)\overline{\ 24}$ $5)\overline{\ 30}$ $7)\overline{\ 14}$ $4)\overline{\ 12}$ $4)\overline{\ 20}$ $1)\overline{\ 8}$ $3)\overline{\ 21}$ $5)\overline{\ 4}$ $7)\overline{\ 42}$ $5)\overline{\ 30}$

5) 35 1) 5 4) 4 9) 72 3) 12 3) 9 5) 20 6) 30 6) 24 8) 64

3) 21 4) 20 7) 7 8) 56 2) 8 5) 25 6) 12 7) 28 8) 3 4) 24

 $9)\overline{27}$ $6)\overline{30}$ $5)\overline{20}$ $4)\overline{24}$ $1)\overline{3}$ $6)\overline{18}$ $7)\overline{21}$ $4)\overline{28}$ $5)\overline{40}$ $7)\overline{14}$

5) 15

4) 24

 $Set\ V\ [all\ previous\ sets]$

7) 35

7) 28

Practice on facts in Set V

9) 27

8) 32

4)4

6) 24

One Minute Timing on facts in Set V

4) 20

7) 49

Set W [all previous sets]

Practice on facts in Set W

7) $\overline{14}$ 7) $\overline{35}$ 7) $\overline{49}$ 5) $\overline{20}$ 6) $\overline{24}$ 9) $\overline{27}$ 8) $\overline{32}$ 4) $\overline{4}$ 8) $\overline{16}$ 4) $\overline{16}$

6) 36 4) 20 8) 40 4) 24 6) 18 1) 9 3) 9 2) 14 8) 56 9) 81

 $9)\overline{36}$ $4)\overline{28}$ $4)\overline{3}$ $7)\overline{28}$ $3)\overline{27}$ $5)\overline{20}$ $4)\overline{24}$ $5)\overline{40}$ $4)\overline{20}$ $7)\overline{35}$

4) 24 3) 21 8) 40 7) 21 6) 12 2) 6 5) 15 5) 35 4) 28 6) 24

One Minute Timing on facts in Set W

 $2)\overline{4}$ 6) $\overline{30}$ 2) $\overline{14}$ 2) $\overline{12}$ 4) $\overline{20}$ 1) $\overline{8}$ 9) $\overline{36}$ 3) $\overline{6}$ 6) $\overline{42}$ 5) $\overline{10}$

 $7)\overline{35}$ 2) 8 4) 36 3) 15 6) 12 9) 9 5) 20 9) 18 4) 24 5) 15

3) 18 2) 6 7) 28 8) 56 7) 14 5) 30 8) 16 7) 5 2) 10 6) 24

 $9)\overline{27}$ $6)\overline{18}$ $4)\overline{32}$ $4)\overline{28}$ $8)\overline{32}$ $5)\overline{40}$ $7)\overline{42}$ $4)\overline{8}$ $5)\overline{35}$ $1)\overline{6}$

Set X [all previous sets]

Practice on facts in Set X

2)8 3)21 7)49 5)20 2)10 9)45 8)32 4)4 8)16 7)35

 $6)\overline{36}$ $4)\overline{20}$ $5)\overline{30}$ $7)\overline{42}$ $6)\overline{54}$ $1)\overline{9}$ $3)\overline{9}$ $4)\overline{24}$ $8)\overline{56}$ $9)\overline{81}$

 $9)\overline{36}$ $4)\overline{28}$ $4)\overline{16}$ $7)\overline{28}$ $9)\overline{27}$ $2)\overline{4}$ $4)\overline{28}$ $6)\overline{30}$ $4)\overline{8}$ $7)\overline{42}$

6) 24 3) 6 8) 40 3) 27 6) 42 2) 6 5) 15 1) 5 4) 32 9) 54

One Minute Timing on facts in Set X

2) 4 6) 30 2) 14 2) 12 4) 20 1) 8 9) 36 3) 6 6) 42 5) 10

7) 35 2) 8 4) 36 3) 15 6) 12 9) 9 5) 20 9) 18 4) 24 5) 15

3) 18 2) 6 7) 28 8) 56 7) 14 5) 30 8) 16 7) 5 2) 10 6) 24

 $9)\overline{27}$ 6) $\overline{18}$ 4) $\overline{32}$ 4) $\overline{28}$ 8) $\overline{32}$ 5) $\overline{40}$ 7) $\overline{42}$ 4) $\overline{8}$ 5) $\overline{35}$ 1) $\overline{6}$

	Date	Date	Date	Date	Date	Date								
	of	of	of	of	of	of			is	5				
	1 st try	2 nd try	3 rd try	4 th try	5 th try	6 th try	ROCK	FTI	NG			/		
Α	,			,		;				_				
В							toward		eing	ga		:		
С							master							
D							divisio	n		L \	X			
Ε							facts!			V	W	$\langle \! / \! / \! \rangle$		
F										, U				
G										T		,		
Н								//		S]/			
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J								()	Q	\searrow \swarrow	/	C_{Ω}	lor i	r
K								Ò	P	eq /				
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M								N/	T	$\sqrt{}$			en y	
										Y		nac	s its	
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O							J H G			•		1-n		ıt
U			<			E D C	J H G		Date of 1st try	Date of 2 nd try	Date of 3 rd try	1-n	ninu	11 ·
U					_	\D	J H G	P	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	1t
U					A	C	J H G	P Q	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	ıt
U					_	C	J H G		of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	1t
O					_	C	J H G	Q	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	1t
O					_	C	J H G	Q R	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	11 ·
U					_	C	J H G	Q R S	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	11
U					_	C	J H G	Q R S T	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	11
U					_	C	J H G	Q R S T U	of 1st	of 2 nd	of 3 rd	1-n tim	Date of 5th	11

Two Minute Timing # 1 (Do this weekly to see your progress)

$$6)\overline{42}$$
 5) $\overline{10}$ 5) $\overline{35}$ 7) $\overline{56}$ 2) $\overline{4}$ 3) $\overline{6}$ 2) $\overline{6}$ 4) $\overline{24}$ 4) $\overline{8}$ 2) $\overline{10}$

$$6)\overline{18}$$
 9) 45 6) 5 8) 4 9) 72 6) 54 1) 8 3) 27 9) 18 6) 36

$$8) \overline{24} + 1) \overline{9} + 4) \overline{12} + 7) \overline{21} + 8) \overline{4} + 5) \overline{15} + 8) \overline{8} + 6) \overline{1} + 2) \overline{2} + 1) \overline{3}$$

$$4)\overline{\ 28}$$
 $6)\overline{\ 48}$ $8)\overline{\ 40}$ $7)\overline{\ 35}$ $8)\overline{\ 56}$ $7)\overline{\ 42}$ $4)\overline{\ 20}$ $4)\overline{\ 32}$ $6)\overline{\ 24}$ $2)\overline{\ 16}$

Two Minute Timing # 2 (Do this weekly to see your progress)

$$2)\overline{4}$$
 3) 6 6) 42 5) 10 5) 35 7) 56 2) 6 4) 24 4) 8 2) 10

$$9)\overline{72}$$
 $6)\overline{54}$ $6)\overline{18}$ $9)\overline{45}$ $6)\overline{5}$ $8)\overline{4}$ $1)\overline{8}$ $3)\overline{27}$ $9)\overline{18}$ $6)\overline{36}$

$$8) \overline{16} \quad 5) \overline{5} \quad 2) \overline{18} \quad 2) \overline{14} \quad 9) \overline{54} \quad 1) \overline{7} \quad 4) \overline{16} \quad 2) \overline{16} \quad 6) \overline{30} \quad 2) \overline{8}$$

$$4\overline{\smash)2}$$
 $5\overline{\smash)45}$ $5\overline{\smash)25}$ $4\overline{\smash)36}$ $3\overline{\smash)9}$ $9\overline{\smash)27}$ $8\overline{\smash)72}$ $9\overline{\smash)1}$ $9\overline{\smash)36}$ $9\overline{\smash)63}$

$$3) \overline{12} + 7) \overline{49} + 9) \overline{9} + 3) \overline{21} + 8) \overline{64} + 3) \overline{15} + 1) \overline{4} + 3) \overline{24} + 9) \overline{81} + 3) \overline{18}$$

$$8)\overline{48}$$
 $5)\overline{40}$ $5)\overline{30}$ $7)\overline{14}$ $1)\overline{6}$ $6)\overline{12}$ $8)\overline{32}$ $7)\overline{63}$ $5)\overline{20}$ $7)\overline{28}$

Two Minute Timing # 3 (Do this weekly to see your progress)

$$1\overline{\smash{\big)}\,8}$$
 $3\overline{\smash{\big)}\,27}$ $6\overline{\smash{\big)}\,5}$ $8\overline{\smash{\big)}\,4}$ $9\overline{\smash{\big)}\,72}$ $6\overline{\smash{\big)}\,54}$ $6\overline{\smash{\big)}\,18}$ $9\overline{\smash{\big)}\,45}$ $9\overline{\smash{\big)}\,18}$ $6\overline{\smash{\big)}\,36}$

$$8)\overline{8}$$
 6) 1 4) 12 7) 21 8) 4 5) 15 8) 24 1) 9 2) 2 1) 3

$$2)\overline{6}$$
 $4)\overline{24}$ $5)\overline{35}$ $7)\overline{56}$ $2)\overline{4}$ $3)\overline{6}$ $6)\overline{42}$ $5)\overline{10}$ $4)\overline{8}$ $2)\overline{10}$

$$4)\overline{16}$$
 $2)\overline{16}$ $9)\overline{54}$ $1)\overline{7}$ $8)\overline{16}$ $5)\overline{5}$ $2)\overline{18}$ $2)\overline{14}$ $6)\overline{30}$ $2)\overline{8}$

$$8)\overline{72}$$
 $9)\overline{1}$ $3)\overline{9}$ $9)\overline{27}$ $4)\overline{2}$ $5)\overline{45}$ $5)\overline{25}$ $4)\overline{36}$ $9)\overline{36}$ $9)\overline{63}$

$$1)\overline{4}$$
 $3)\overline{24}$ $8)\overline{64}$ $3)\overline{15}$ $3)\overline{12}$ $7)\overline{49}$ $9)\overline{9}$ $3)\overline{21}$ $9)\overline{81}$ $3)\overline{18}$

$$8)\overline{32}$$
 $7)\overline{63}$ $1)\overline{6}$ $6)\overline{12}$ $8)\overline{48}$ $5)\overline{40}$ $5)\overline{30}$ $7)\overline{14}$ $5)\overline{20}$ $7)\overline{28}$

$$4)\overline{20}$$
 $4)\overline{32}$ $8)\overline{40}$ $7)\overline{35}$ $8)\overline{56}$ $7)\overline{42}$ $4)\overline{28}$ $6)\overline{48}$ $6)\overline{24}$ $2)\overline{16}$

Two Minute Timing # 4 (Do this weekly to see your progress)

 $9\overline{\smash)54}$ $1\overline{\smash)7}$ $8\overline{\smash)16}$ $5\overline{\smash)5}$ $2\overline{\smash)18}$ $2\overline{\smash)14}$ $4\overline{\smash)16}$ $2\overline{\smash)16}$ $6\overline{\smash)30}$ $2\overline{\smash)8}$

3) 9 9) 27 4) 2 5) 45 5) 25 4) 36 8) 72 9) 1 9) 36 9) 63

 $6)\overline{5}$ $8)\overline{4}$ $9)\overline{72}$ $6)\overline{54}$ $6)\overline{18}$ $9)\overline{45}$ $1)\overline{8}$ $3)\overline{27}$ $9)\overline{18}$ $6)\overline{36}$

 $4\overline{)12}$ $7\overline{)21}$ $8\overline{)4}$ $5\overline{)15}$ $8\overline{)24}$ $1\overline{)9}$ $8\overline{)8}$ $6\overline{)1}$ $2\overline{)2}$ $1\overline{)3}$

5) 35 7) 56 2) 4 3) 6 6) 42 5) 10 2) 6 4) 24 4) 8 2) 10

8) 64 3) 15 3) 12 7) 49 9) 9 3) 21 1) 4 3) 24 9) 81 3) 18

 $1)\overline{6}$ $6)\overline{12}$ $8)\overline{48}$ $5)\overline{40}$ $5)\overline{30}$ $7)\overline{14}$ $8)\overline{32}$ $7)\overline{63}$ $5)\overline{20}$ $7)\overline{28}$

 $8)\overline{40}$ $7)\overline{35}$ $8)\overline{56}$ $7)\overline{42}$ $4)\overline{28}$ $6)\overline{48}$ $4)\overline{20}$ $4)\overline{32}$ $6)\overline{24}$ $2)\overline{16}$

Two Minute Timing # 5 (Do this weekly to see your progress)

$$2)\overline{14}$$
 6) $\overline{30}$ 2) $\overline{8}$ 4) $\overline{16}$ 2) $\overline{16}$ 9) $\overline{54}$ 1) $\overline{7}$ 8) $\overline{16}$ 5) $\overline{5}$ 2) $\overline{18}$

$$9)\overline{45}$$
 $9)\overline{18}$ $6)\overline{36}$ $1)\overline{8}$ $3)\overline{27}$ $6)\overline{5}$ $8)\overline{4}$ $9)\overline{72}$ $6)\overline{54}$ $6)\overline{18}$

$$1\overline{\smash)9}$$
 $2\overline{\smash)2}$ $1\overline{\smash)3}$ $8\overline{\smash)8}$ $6\overline{\smash)1}$ $4\overline{\smash)12}$ $7\overline{\smash)21}$ $8\overline{\smash)4}$ $5\overline{\smash)15}$ $8\overline{\smash)24}$

$$4)\overline{36}$$
 9) $\overline{36}$ 9) $\overline{63}$ 8) $\overline{72}$ 9) $\overline{1}$ 3) $\overline{9}$ 9) $\overline{27}$ 4) $\overline{2}$ 5) $\overline{45}$ 5) $\overline{25}$

$$3)\overline{21}$$
 $9)\overline{81}$ $3)\overline{18}$ $1)\overline{4}$ $3)\overline{24}$ $8)\overline{64}$ $3)\overline{15}$ $3)\overline{12}$ $7)\overline{49}$ $9)\overline{9}$

$$7)\overline{14}$$
 $5)\overline{20}$ $7)\overline{28}$ $8)\overline{32}$ $7)\overline{63}$ $1)\overline{6}$ $6)\overline{12}$ $8)\overline{48}$ $5)\overline{40}$ $5)\overline{30}$

$$6)\overline{48}$$
 $6)\overline{24}$ $2)\overline{16}$ $4)\overline{20}$ $4)\overline{32}$ $8)\overline{40}$ $7)\overline{35}$ $8)\overline{56}$ $7)\overline{42}$ $4)\overline{28}$

Name_____

Two Minute Timing # 6 (Do this weekly to see your progress)

$$4) \overline{16} \ 5) \overline{5} \ 2) \overline{18} \ 2) \overline{14} \ 2) \overline{16} \ 9) \overline{54} \ 1) \overline{7} \ 8) \overline{16} \ 6) \overline{30} \ 2) \overline{8}$$

$$4)\overline{20}$$
 $7)\overline{42}$ $4)\overline{28}$ $6)\overline{48}$ $4)\overline{32}$ $8)\overline{40}$ $7)\overline{35}$ $8)\overline{56}$ $6)\overline{24}$ $2)\overline{16}$

$$1\overline{\smash)\,8}$$
 $6\overline{\smash)\,54}$ $6\overline{\smash)\,18}$ $9\overline{\smash)\,45}$ $3\overline{\smash)\,27}$ $6\overline{\smash)\,5}$ $8\overline{\smash)\,4}$ $9\overline{\smash)\,72}$ $9\overline{\smash)\,18}$ $6\overline{\smash)\,36}$

$$8) \overline{8}$$
 $5) \overline{15}$ $8) \overline{24}$ $1) \overline{9}$ $6) \overline{1}$ $4) \overline{12}$ $7) \overline{21}$ $8) \overline{4}$ $2) \overline{2}$ $1) \overline{3}$

$$2)\overline{6}$$
 $3)\overline{6}$ $6)\overline{42}$ $5)\overline{10}$ $4)\overline{24}$ $5)\overline{35}$ $7)\overline{56}$ $2)\overline{4}$ $4)\overline{8}$ $2)\overline{10}$

Two Minute Timing # 7 (Do this weekly to see your progress)

$$8)\overline{4}$$
 $8)\overline{8}$ $6)\overline{1}$ $1)\overline{9}$ $2)\overline{2}$ $1)\overline{3}$ $4)\overline{12}$ $7)\overline{21}$ $5)\overline{15}$ $8)\overline{24}$

$$2)\overline{4}$$
 $2)\overline{6}$ $4)\overline{24}$ $5)\overline{10}$ $4)\overline{8}$ $2)\overline{10}$ $5)\overline{35}$ $7)\overline{56}$ $3)\overline{6}$ $\overline{6})\overline{42}$

$$9)\overline{72}$$
 1) 8 3) 27 9) 45 9) 18 6) 36 6) 5 8) 4 6) 54 6) 18

$$8)\overline{56}$$
 $4)\overline{20}$ $4)\overline{32}$ $6)\overline{48}$ $6)\overline{24}$ $2)\overline{16}$ $8)\overline{40}$ $7)\overline{35}$ $7)\overline{42}$ $4)\overline{28}$

Two Minute Timing # 8 (Do this weekly to see your progress)

 $4)\overline{32}$ $8)\overline{40}$ $7)\overline{35}$ $8)\overline{56}$ $6)\overline{24}$ $4)\overline{20}$ $7)\overline{42}$ $4)\overline{28}$ $6)\overline{48}$ $2)\overline{16}$

 $9)\overline{1}$ $3)\overline{9}$ $9)\overline{27}$ $4)\overline{2}$ $9)\overline{36}$ $8)\overline{72}$ $5)\overline{45}$ $5)\overline{25}$ $4)\overline{36}$ $9)\overline{63}$

 $3) \overline{27} + 6) \overline{5} + 8) \overline{4} + 9) \overline{72} + 9) \overline{18} + 1) \overline{8} + 6) \overline{54} + 6) \overline{18} + 9) \overline{45} + 6) \overline{36}$

2) 16 9) 54 1) 7 8) 16 6) 30 4) 16 5) 5 2) 18 2) 14 2) 8

 $3)\overline{\ 24} \ \ 8)\overline{\ 64} \ \ 3)\overline{\ 15} \ \ 3)\overline{\ 12} \ \ \ 9)\overline{\ 81} \ \ 1)\overline{\ 4} \ \ \ 7)\overline{\ 49} \ \ \ 9)\overline{\ 9} \ \ \ \ 3)\overline{\ 21} \ \ \ 3)\overline{\ 18}$

7) 63 1) 6 6) 12 8) 48 5) 20 8) 32 5) 40 5) 30 7) 14 7) 28

 $6) \overline{1}$ $4) \overline{12}$ $7) \overline{21}$ $8) \overline{4}$ $2) \overline{2}$ $8) \overline{8}$ $5) \overline{15}$ $8) \overline{24}$ $1) \overline{9}$ $1) \overline{3}$

4) 24 5) 35 7) 56 2) 4 4) 8 2) 6 3) 6 6) 42 5) 10 2) 10

Name_____

Two Minute Timing # 9 (Do this weekly to see your progress)

 $1)\overline{8}$ $6)\overline{5}$ $8)\overline{4}$ $3)\overline{27}$ $9)\overline{45}$ $9)\overline{72}$ $9)\overline{18}$ $6)\overline{36}$ $6)\overline{54}$ $6)\overline{18}$

 $1)\overline{4}$ 8) $\overline{64}$ 3) $\overline{15}$ 3) $\overline{24}$ 3) $\overline{21}$ 3) $\overline{12}$ 9) $\overline{81}$ 3) $\overline{18}$ 7) $\overline{49}$ 9) $\overline{9}$

8) 8 4) 12 7) 21 6) 1 1) 9 8) 4 2) 2 1) 3 5) 15 8) 24

 $8) \overline{72} + 3\overline{)9} + 9\overline{)27} + 9\overline{)1} + 4\overline{)36} + 4\overline{)2} + 9\overline{)36} + 9\overline{)63} + 5\overline{)45} + 5\overline{)25}$

 $2)\overline{6}$ $5)\overline{35}$ $7)\overline{56}$ $4)\overline{24}$ $5)\overline{10}$ $2)\overline{4}$ $4)\overline{8}$ $2)\overline{10}$ $3)\overline{6}$ $\overline{6)42}$

4) 16 9) 54 1) 7 2) 16 2) 14 8) 16 6) 30 2) 8 5) 5 2) 18

8) 32 1) 6 6) 12 7) 63 7) 14 8) 48 5) 20 7) 28 5) 40 5) 30

4) 20 8) 40 7) 35 4) 32 6) 48 8) 56 6) 24 2) 16 7) 42 4) 28

Two Minute Timing # 10 (Do this weekly to see your progress)

$$2)\overline{18}$$
 $8)\overline{16}$ $6)\overline{30}$ $2)\overline{16}$ $9)\overline{54}$ $1)\overline{7}$ $4)\overline{16}$ $5)\overline{5}$ $2)\overline{14}$ $2)\overline{8}$

$$9) \overline{9}$$
 $3) \overline{12}$ $9) \overline{81}$ $3) \overline{24}$ $8) \overline{64}$ $3) \overline{15}$ $1) \overline{4}$ $7) \overline{49}$ $3) \overline{21}$ $3) \overline{18}$

$$5)\overline{30}$$
 $8)\overline{48}$ $5)\overline{20}$ $7)\overline{63}$ $1)\overline{6}$ $6)\overline{12}$ $8)\overline{32}$ $5)\overline{40}$ $7)\overline{14}$ $7)\overline{28}$

$$8) \overline{24}$$
 $8) \overline{4}$ $2) \overline{2}$ $6) \overline{1}$ $4) \overline{12}$ $7) \overline{21}$ $8) \overline{8}$ $5) \overline{15}$ $1) \overline{9}$ $1) \overline{3}$

$$5)\overline{25}$$
 $4)\overline{2}$ $9)\overline{36}$ $9)\overline{1}$ $3)\overline{9}$ $9)\overline{27}$ $8)\overline{72}$ $5)\overline{45}$ $4)\overline{36}$ $9)\overline{63}$

$$6)\overline{42}$$
 2) $\overline{4}$ 4) $\overline{8}$ 4) $\overline{24}$ 5) $\overline{35}$ 7) $\overline{56}$ 2) $\overline{6}$ 3) $\overline{6}$ 5) $\overline{10}$ 2) $\overline{10}$

Goal

Graph of my Progress Goal _____ (Graph of the number of problems correct in each 2 minute timing)

80											
78											
76							 				
74						 			 		
72											
70	 					 			 ·		
68						 					
66								 			
64											
62										 	
60					, .						
58					-						
56	 	 									
54										 	
52											
50											
48				•							
46						-	 				
44											
42	 										
40							 				
38											
36	·										
34											
32											
30											
28											
26											
24											
Number											
correct			-								
Date											

Mastering Math Facts

Answer Keys

1

Mastering Math Facts

Where should I begin in Addition? Test to pass Sets A - E

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can.

second timing Number of problems

Where should I begin in Addition? Test to

Test to pass Sets F - I

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can.

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 $\frac{4}{+8}$
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15 second timing Number

Where should I begin in Addition? Test to pas

Test to pass sets K-O

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

15 second timing Goal

Number of problems correct

Where should I begin?

Test to pass sets P-W

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

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[1+2, 2+1, 1+3, 3+1] Practice on facts in Set A Set A

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One Minute Timing on facts through Set C

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One Minute Timing on facts through Set D

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Number of problems correct

1 minute timing goal

Mastering Math Facts

Set E [1+7, 7+1, 4+4] Practice on facts through Set

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One Minute Timing on facts through Set E

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One Minute Timing on facts through Set F

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Number of problems correct_ 1 minute timing goal

Number of problems correct.

1 minute timing goal-

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One Minute Timing on facts through Set J

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One Minute Timing on facts through Set K

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Number of problems correct I minute timing goal_

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ne Minute Timing on facts through Set M

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timing goal Number of problems correct

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Addition Two Minute Timing # 8

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Mastering Math Facts

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Addition

Addition Two Minute Timing # 10	
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Number of problems correct Goal

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Number of problems correct

Goal

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Mastering Math Facts

Where should I begin in Subtraction?

Test to pass Sets A - E

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many c the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal _____ Number of problems correct

Where should I begin in Subtraction? Test to pass Sets F

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Number of problems correct

Goal

Where should I begin in Subtraction? Test to pass Sets ${ m K}-{ m O}$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Number of problems correct

Goal

Where should I begin in Subtraction? Test to pass Sets $\Gamma-W$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Number of problems correct

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ne Minute Timing on facts in Set A

minute timing goal Number of problems correct

One Minute Timing on facts through Set B

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ne Minute Timing on facts through Set C

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ne Minute Timing on facts through Set D

ng goal _____ Number of problems correct

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One Minute Timing on facts through Set E

Number of problems correct 1 minute timing goal

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One Minute Timing on facts through Set F

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Number of problems correct 1 minute timing goal

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one Minute Timing on facts through Set G

ning goal _____ Number of problems correct

 Set H [5-3, 5-2, 12-6]
 Practice on facts through Set TI

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e Minute Timing on facts through Set H

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1 minute timing goal Number of problems correct

Set I [6-2, 6-4, 14-7] Practice on facts through Set

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One Minute Timing on facts through Set I

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Number of problems correct 1 minute timing goal

One Minute Timing on facts through Set K

1 minute timing goal Number of problems correct

set L [9-2, 9-7, 11-7, 11-4] Practice on facts through Set L

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One Minute Timing on facts through Set L

minute timing goal ______ Number of problems correct

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One Minute Timing on facts through Set N

one Minute Timing on facts through Set M

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1 minute timing goal

Number of problems correct

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One Minute Timing on facts through Set O

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1 minute timing goal Number of problems correct

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One Minute Timing on facts through Set P

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One Minute Timing on facts through Set Q

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One Minute Timing on facts through Set R

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One Minute Timing on facts through Set S

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One Minute Timing on facts through Set T

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One Minute Timing on facts through Set V

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One Minute Timing on facts through Set Y

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Mastering Math Facts

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$ \begin{array}{c} \text{ming} \\ 6 \\ \hline -4 \end{array} $	$\frac{18}{9}$	$\frac{10}{4}$	15 <u>9</u>	14 	∞ -	6 $\frac{12}{6}$	14 <u>– 9</u>	Number of problems correct
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o Minute Timing # 7 $ \begin{array}{ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6 6 16 11 5 5 -4 -3 -7 -7 -3 -4 2 3 9 4 2 1	Number of problems correct

12 3	6	$\frac{16}{9}$	<u>17</u>	∠ <u> </u>	10 3	12 6 6	و 4 1 ك	
15 6	14 	9 C	18 9	$\frac{10}{4}$	× -	$\frac{12}{6}$	14 9	
$\frac{1}{8}$	11 7	€ 4	7 6 4	$\frac{16}{8}$	$\frac{10}{8}$	17 8 4	× 1 1 × ×	rrect
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ming 13 <u>8</u>	$\frac{10}{8}$	12 	e 7	± € ∞	6 9 6	11 6 8	3	of prob
Minute Timing $\frac{9}{9}$ $\frac{8}{2}$ $\frac{13}{5}$ $\frac{-6}{5}$ $\frac{-8}{5}$	$\frac{10}{8}$	2	3 2	15	6 0	0	$\frac{13}{6}$	umber
	11 9	11 4	1	16 9	13 4	12 -7 5	a [] 8	Ż
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# 9 12 5 12 =6 -5 -8 6 0 4	6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\frac{8}{-7}$ $\frac{9}{-7}$ $\frac{10}{2}$	umber of problems correct
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Two Minute Timing # 9 12 13 1 9 12 5 12 $\frac{-7}{5}$ $\frac{-4}{9}$ $\frac{-1}{0}$ $\frac{-8}{1}$ $\frac{-6}{6}$ $\frac{-5}{0}$ $\frac{-8}{4}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Number of problems correct
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Where should I begin in Multiplication? Test to pass Sets A - F

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin, enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

4	Ø	œ	-	Κ	2
7	<u>x</u> 5	10	7	% X	16
2	9 <u> </u>	12	-	<u>x</u>	~
-	6X	6	7	곘	4
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ъ	汉	9	7	겡	4
∞	X	16	з	긺	က
7	<u>x7</u>	4	т	<u>x</u> 3	6
0	<u>x</u> 3	0	9	<u>x</u>	9
6	곘	18	4	옜	0

Where should I begin in Multiplication? Test to pass Sets $\, {f G} - {f K} \,$

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

χ 5	25	4	<u>x</u>	16
6 8×	72	5	ξ)	25
e 2 <u>X</u>	45	6	<u>*</u>	36
9 y	36	9	9 <u> </u>	36
£ ₹				63
9 1x	63	3	ପ୍ଲା	27
4 6X				
9 8 <u>8</u>	54	∞	<u>کا</u>	72
4 Å	16	5	었	45
₀ &	27	3	ξ.	6

Where should I begin in Multiplication? Test to pass Sets L -O

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready,

Where should I begin in Multiplication? $ext{Test to pass Sets } \mathbf{P-T}$

Number of problems correct

Goal_

Number of problems correct_

Goal.

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

6 9 <u>x</u>	24	×8 √	26
6 <u>X</u> 5	30	5 X	35
4 <u>x8</u>	32	7 <u>x</u> x	49
7 <u>x4</u>	28	9 XZ	42
8 <u>x</u>	48	5 x6	30
<u>∨</u> <u>x</u>	63	8 <u>x</u>	72
7 <u>x6</u>	45	4 <u>x</u>	24
5 XZ	35	6 8 8	48
8 🔀	26	4 X5	20
× 5	40	× × ×	26

Number of problems correct

Goal.

Number of problems correct.

Goal

Set A [1 x any number, any number x 1] Practice on facts in Set A

2 2	7	e K	₁₀ ≱ v	e \\ \\ \\
7 7	 -	3	_დ শ w	9 Kl 9
1 44	•	v K v	∞ % ¹	1 X 1
6 1	9	∞ ☆ ∞	9 X 9	7
1 4	4	$\boldsymbol{\omega} \bowtie_{1}$	7 7	7 X 7
└	<u>۱</u>	- -	- 1 X	4 X 4
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1 5	7	9 6	- ⊠ -	o 186
78	₩ ∞	4 X 4	¹ ¼ 4	v ⊠ 2
ee 2	(m	7 × 1	∞ ⅓ ∞	o 8

One Minute Timing on facts in Set A

7	e k 0	v ⊠ v	w 1₹ 3
1	3 1	% । । भ	9 X 6
1 6	$\mathbf{v} \boxtimes \mathbf{v}$	~ % →	- K -
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7	9 \$\display 1	- []	e
∞ % 1	4 🖒 4	¹ ¼ 4	v ¼ ™
& ∆ &	1	∞ ☆ ∞	6
9 <u>X</u> 9	∞ ⊠ ∞	₉ ⅓ 9	7 12 1
¹ ^X 4	$^{-1}$ \otimes $^{-1}$	7 7 7	r \\
X	- K	7	4 A 4

1 minute timing goal

Number of problems correct

Set B [0 x any #, any # x 0] Practice on facts through Set B

7 17 17	° ₹ 9	$_{\mathbf{c}}$ Δ \mathbf{v}	° 0 № 0
o \$\times^1\$	$\mathbf{a} \stackrel{[3]}{\approx} 1$	° 0 № 0	9 X 9
o 18	o 1% 2	∞ % 1	0 K 0
o \$\angle 0	e \text{\ti}}\\ \text{\tin}}}}}}}}}}}}} \text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tex{\tex	o \$\foat{x}{0}	∞ % 1
7	9 6	o \$\times^{1}\$	1 <u>x6</u> 6
~ % ₁	o x	¹ ¼ 4	c X 02
~ ଧ୍ଲ ୦	0 x' 0	∞ ⋈ o	^x 9
₀ ⋈ 0	∞ ∑ ∞	9 X 9	○ 以 ○
□ 첽 4	o (있 o	o 12 ¹⁷	7 X
o x 4	_ K _	o x' 0	4 ^X 4

One Minute Timing on facts through Set B

7 7 7	e \text{\ti}}\\ \text{\texitile}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}\}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}}\\ \text{\text{\text{\text{\text{\ti}}\tiliz}{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}}}}}}}}}}}}}}}}} \encapiconmities \text{\t	र ह्र	∞ ଆ •
o % 1	$\mathbf{a} \bowtie_{1}$	e ⊗ o	9 Kl 9
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1 minute timing goal

Number of problems correct_

Set C [2x3, 3x2, 2x2] Practice on facts through Set C

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2 ⅓ 4	ତ ଧି ୦	∞ 1% 1	~ 집 —
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e ½ ⁵	e 1% 1	e K2 3	1 X L

One Minute Timing on facts through Set C

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r	o	∞ 1% 1	4 0 0
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ତ ରୁ ୦	o Kr o	6 \$\inf\$ 6	€ K 3
e K 3	o 12° 5	o	7 X 1
	0 10 7	_© ह्य ७	3 K3 1
9 <u>x</u> y 9	<u>- X - </u>	2	24 ⅓ 4
e	1	o ¾ o	v ∑ ¬

1 minute timing goal

Number of problems correct

Set D [2x4, 4x2, 2x5, 5x2] Practice on facts through Set D

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₂ ≱ ∞	o ।।	∞ 1% 1	° % c
5 x2 10 10 10 10 10 10 10 10 10 10 10 10 10	2 Å ∞	2 Å ∞	1 X 4
6 K 3	9 %	e 17 °	4 % ∞
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One Minute Timing on facts through Set D

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4 ⅓ ∞	e K2 33	6 6	6 K 6
7 12 7	∞ ଧ୍ଲ •	2 × 2 10	10 K5 2

1 minute timing goal

Number of problems correct_

Set E [6x2, 2x6, 7x2, 2x7] Practice on facts through Set E

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4 ⅓ α	×	0	7	<u>₹</u> 3	9	2	<u>x2</u>	4
° ⅓ c	× 7 9	12	4	<u>x1</u>	4	2	<u>9x</u>	12
° % €	4 2	œ	7	X	4	4	<u>x</u> 2	∞
2 × 2	<u>*</u> 9 %	12	4	0X	0	7	<u>x</u> 2	14
% ¹	× 24	4	9	<u>x2</u>	12	8	%	9
2 Å α	o 4 ⅓	4	^	x2	14	0	<u>X</u> 7	0
²	k 2 2	14	2	<u>x4</u>	œ	9	<u>x2</u>	12

One Minute Timing on facts through Set E

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⁶ ⁶ ⁷ ⁷ ⁶			
° ∞	Q Q ⁷	^⅓ 6 ∠	* ₹ ₩
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10 k ² 50			
e	% ∞ %	2 K	` ₩ ^
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²	∆ 4 ℃	Δ v	¹

Number of problems correct

1 minute timing goal.

Practice on facts through Set F K 20 X 7 4 o 2 8 9 X 16 X **Set** F [8x2, 2x8, 9x2, 2x9] 8 × 2 칪 8 9 x 5 x 2

10

One Minute Timing on facts through Set F

	1	긺	_	7	X2	4	9	<u>X</u> 5	12	4	X	œ
 	П	<u>x</u> 4	4	9	긺	9	Ø	<u>6x</u>	18	1	X3	က
	4	X2	∞	6	<u>X</u> 5	8	1	<u>x</u> 2	S	2	8X	16
	5	X	2	2	X3	9	2	IJ	7	2	<u>x</u>	12
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	5	X2	9	œ	X2	16	1	<u></u> X0	0	7	K K	14
	1	\overline{x}	7	က	되	က	1	X 3	က	0	χ	0
	0	X	0	8	X	∞	8	ΙΧ	4	1	<u>%</u>	∞
	61	8 <u>X</u>	16	CI	<u>x</u> 2	4	8	<u>X</u>	œ	6	X2	18

1 minute timing goal.

Number of problems correct

Set G [9x3, 3x9, 9x4, 4x9] Practice on facts through Set G

თ	<u>×</u>	36	က	엤	9	0	Ŋ	0	က	잇	27
o	汉	18	က	엤	27	2	엤	2	7	<u>%</u>	12
4	ଷ୍ଟା	36	7	뎄	14	2	뙤	12	4	ଷ୍ଟା	36
9	汉	12	6	ଝା	27	6	¾	36	7	<u> </u>	14
က	ଷ୍ଠା	27	4	ଷ୍ଟା	36	ω	엤	16	6	ଅ	27
ω	엤	16	0	엤	4	4	ଷ୍ଟା	36	7	엤	2
0	됬	0	თ	<u>X</u>	36	7	뗏	16	80	뎄	16
7	뗐	16	7	옜	48	6	ଅ	27	6	<u>*</u>	36
2	X	14	9	엤	12	က	ଷ୍ଟା	27	7	었	9
0	ଅ	27	7	<u>&</u>	16	6	엤	1 8	7	엤	14

One Minute Timing on facts through Set G

²	~ 되	7	7	엤	4	2	Ø	12
ω ¾ ∞	4 Ø	36	œ	엤	16	7	ଷ୍ଟା	9
ი ≱ ზ	1 X	7	0	<u>*</u>	36	3	되	2
~ 위 ㅇ	ᅜᅆ	5	9	엖	12	က	ଷ୍ଟା	27
7 ⋈ 6	~ 성	0	τ-	엤	6	2	칟	2
~ & w	- 8	9	9	기	9	4	욋	36
ო ⋈ დ	7 6 7	18	6	ଅ	27	∞	Χ	∞
2 k 2	က တွ	27	7	싟	10	က	됬	က
° 8	K 12	9	-	<u>%</u>	∞	0	뗏	0
~ 정 🗸	0 ×	0	4	엤	∞	7	\X	4

1 minute timing goal

Number of problems correct

Set H [9x5, 5x9, 3x3] Practice on facts through Set H

ნ	X	36	ß	겧	10	4	엣	36	7	ଅ	9
4	ଥା	36	က	ଷ୍ଠା	27	9	되	9	თ	징	45
7	×	14	က	있	0	0	<u>\$</u>	36	က	ଅ	6
2	ଷ୍ଟା	45	7	었	18	თ	ଅ	27	0	ᅇ	0
-	뗏	œ	6	있	45	2	ଷ୍ଟା	45	7	<u>%</u>	16
က	었	တ	က	엤	တ	7	 	14	0	<u>*</u>	36
6	엤	27	თ	엤	2	ω	汉	16	က	ଷ୍ଟା	27
2	ջ	16	4	엤	36	က	낈	တ	ß	ଷ୍ଟା	45
თ	윘	45	œ	뎼	16	2	엤	48	თ	엤	2
က	옜	27	2	ଷ୍ଟା	45	6	χI	45	6	낆	27

One Minute Timing on facts through Set H

	φ %	12	~ X	4	თ	ଅ	27	2	되	2
	L 2	7	_ი გ	6	_	≵ ∣	4	S	ଷ୍ଟା	45
	K a	10	1 X	7	7	ଅ	9	7	성	10
0	4 X	4	4 Ö	0	တ	잆	45	4	되	4
	o 2	45	ତ ଧ	27	4	엤	∞	_	있	9
	ᅈᄸ	16	- %	9	7	又	7	6	<u>*</u>	36
D	o 지	9	o 🛪	36	7	윘	10	∞	되	œ
	o ¾	0	$^{\infty}$	œ	က	낆	6	7	낑	9
	ଦ ଧା	9	4 X	∞	Ψ-	뗐	œ	4	엤	36
	4 %	36	ଓ ତା	45	2	%	12	6	ଅ	27
'										

1 minute timing goal

al Number of problems correct.

Set I [9x6, 6x9, 4x4] Practice on facts through Set I

∞ ∞	4 ¾ 6	رد كا 5	ω ≱ ω
ო 🏹 თ	ه الأ م	ი გ1 Հ	4 ¾ 6
4 ¾ 6	o ನി ಚ	ი ბĭ ኢ	و کا 4
ო 있 O	~ ⋈ 9	4 🖹 4	9 X3 27
ი ჯ ჯ	ი ბĭ 4	ი გ 1 გ	ය යි ව
o o∖ 2	က ကျ တ	4 회 8	გ დ × 5
4 ¥ ∞	ი 刻 表	ი ბĭ 2 2	² ∞ ² 9
_ର ଧ ୪	~ 정 4	o ⋈ 7	o * 8
ა გე 27	o ≱i &	م _{ال} ا م	9 × 8
4 Ճ Տ	ი ბĭ ₹	4 ¾ 6	5 45

One Minute Timing on facts through Set I

® 정 년 요 점 4 ® 점	6 ∘ ⋈ o
2 × × × × × × × × × × × × × × × × × × ×	6 6 8 9 9
∞ ⋈ ७ - ⋈ ७ 4 ⋈	8 °° °° 7
⁶ δ 5 7 4 7 8 δ 1 1 1 1 1 1 1 1 1 1	
යක් ව යෙන් න යෙන්	
- 8 8 ∞ 5 4 6 ∞ 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 – 7 7
4 4 6 0 5 0 4 4	16 °° 4 × 36
- 4 4 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ວ _ບ ≱ ວ
27 K3 9 28 K6 9 8	5
4 മ് დ ഗമ് ര 4 മ്	36 4 ₹ 4

1 minute timing goal______ Number of problems correct_

Set J [9x7, 7x9, 5x5] Practice on facts through Set J

_	X ∣	4	4	X	16	9	곘	12	7	ଷ୍ଟା	63
6	뙤	24	-	엤	7	4	됬	4	0	ᅇ	0
2	ଷ୍ଟା	45	တ	' ×	63	တ	ΚŅ	45	7	<u> </u>	7
2	χ	25	2	%	45	က	었	တ	ß	ξ	25
7	윘	63	2	χ	25	თ	<u>%</u>	54	9	<u>&</u>	54
က	ଅ	6	ဆ	汉	16	6	 	63	0	<u> </u>	63
7	옜	12	7	낎	9	ß	잆	25	4	≱	16
თ	<u> </u>	63	7	엤	63	7	ଞ୍ଚା	9	7	뙤	12
4	<u>*</u>	16	4	겠	œ	9	ଷ୍ଟା	54	7	뎄	4
9	ଷ୍ଟା	54	တ	匆	54	7	ଥା	63	တ	χ 22	45

One Minute Timing on facts through Set J

4 🖹 4	o ≯l &	и ^М 4	ro 겖 6
- [⊗] ∞	⁰ I	2 × 4	_ω ⊠ α
က 👸 တ	- ⅓ -	و <u>۲</u> م	~ ରା ଓ
10 1× 2	8 × ∞ 27	25 × 5	o [½ 0
25 × 55	2 % 2	o 🕍 o	_∞ ⊠ ∞
~ <u>⊁</u>	ص الآ ب	و _{الإ ٣}	4 ¾ 6
ო <u>გ</u> O	9 × 63	φ % 2	∞ ∑ ∞
~ [×] ി മ	ଳ ଧ୍ଲା ଦ	o ≱∣ 8	4 🖄 🗪
9 × × 63	င္ ဗွ	ი ⋈ 6	4 외 8
° ⋈ 2	∽ ¾ ∞	~ ⊗ %	⁷ الا م

1 minute timing goal______

Number of problems correct

Set K [9x8, 8x9, 6x6] Practice on facts through Set K

² ⋈ 4	က ညှု တ	ი გi Z	_{r∪} ≃ r∪
。 최 각	[∞] ∅ 2	o ≯ &	° ¼ °
ه الا م	~ ∆i 4	_စ ရွာ ဗို	∞ ⊗ 2
° % %	_∞ [∑]	ი 실 6	5 ×5 ×5
⁶ ⊗ 2	22 ∑ 22	⁹	o ∞ 42
~ ହା ଓ	o ⊗ 2	25 K5 55	6 8 Z
∞ ⊗ 2	° ⊗ ⊗	4 ol x	× ∞ × ∞
ი ⋈ 6	o ⊼ 8	و م کل	4 ¾ 16
4 ¾ 6	^{ರ ಜ್ಞ} 2	∽ ରା ଥେ	9 × 9 × 9
e ⋈ 8	^{2 ⊗} 9	[∞] ମୁ ଅ	° % X

One Minute Timing on facts through Set K

1 minute timing goal_____

Number of problems correct

Set L [3x4, 4x3, 7x7] Practice on facts through Set L

တ	<u> </u>	63	က	ଅ	6	က	<u>¥</u>	12	2	χ	25
9	ଷ୍ଟା	24	80	ଷ୍ଠା	72	6	<u>%</u>	72	7	<u> </u>	49
2	뎄	10	က	¾	12	9	8	36	က	X	12
9	9	36	9	겧	12	5	잇	45	က	잇	27
4	낆	12	2	낑	25	6	 	63	9	엤	24
7	<u> </u>	49	7	ଷ୍ଟ	63	7	 	49	თ	<u>&</u>	72
œ	엤	72	7	8 8	16	4	읾	0	7	엤	4
7	ଷ୍ଟା	63	4	낁	12	-	X ∣	4	4	띴	12
က	X	15	6	윘	72	7	엤	14	∞	엤	72
4	되	4	7	<u> </u>	49	4	ଅ	7	9	옜	36

One Minute Timing on facts through Set L

4	낆	12	က	낆	6	4	ଷ୍ଟା	36	က	엤	27
2	%	16	ი	≱ ∣	36	4	띴	12	2	됬	2
9	옞	36	က	<u>*</u>	12	o	×	6	~	되	_
7	씽	10	-	엤	6	2	었	10	_	뙤	9
2	ଷ୍ଟା	45	3	성	25	0	엤	0	9	옔	36
7	엤	4	9	엤	12	_	엤	7	7	' ×	49
თ	匆	54	7	<u> </u>	49	7	<u>%</u>	12	თ	엤	48
თ	<u>'×</u>	63	က	ᅬ	က	ო	≱	12	თ	<u> </u>	63
2	있	0	တ	χ	45	7	엤	14	_∞	ଷ୍ଟା	72
က	ଷ୍ଟା	27	7	<u>×</u>	4	4	<u>*</u>	16	က	엤	9

1 minute timing goal

Number of problems correct_

Set M [3x5, 5x3, 8x8] Practice on facts through Set M

o ⋈ છ	్ట్లు ల	∞ ⋈ 2	ट हा ट्ट
∞ থ 2	4 외 2	ω ≱l 5	0 x 0
ده گا ت	~	~ 회 🕏	~ ^{√×} 49
ဖ မွ ဗွ	ი ბĭ ኢ	رد كا 6	∾ % @
∞ ⋈ 4	ი ৯ 년	∞ ହା 2	9 kg o
ი გ ჯ	ი ≱ გ	∽ ⅓ 6	∞ ∞ X
² % 2	2 kh 2	ده کا کر	ω ≱l 5
~ ⋈ 4	ده کا ن	- ¾ 4	ده ۱۲۵ ت
ω ≱1 5	∞ ⋈ 🎖	∞ ⋈ &	4 & 5
4 점 년	ი ჯ გ	م كا ك	⁶ ⊗ 7

One Minute Timing on facts through Set M

	~	ଳ ଧ୍ଲା ଦ	4 ⅓ ∞	~ ଧ୍ଲ ଓ
	- ∞ ∞	م كا ك	_ග හි දි	o 5 × 5
	ω ≱I 5	ه کا ه	و کا ی	~ ≥ ~
)	2 kj 6	د ^{کا} و	ده کا ک	o & X
	∞ ⋈ 2	∞ ⋈ 2	୦ ଖ ୦	2 k² 22
	ი ౙ 5	9 کا 2	4 XI Z	[∞] [∞] ^χ 4
)	ဝ ဗ္ဗု	o ≯∣ 8	9 kg o	² ⋈ 4
	- <u>X </u> -	_ພ ⊠ ພ	- ¾ 4	ده کا ک
	م کا خ	⁶	~ % 63	- ଶ ଦ
	ಿ ठो दे	∽ ⋈ 4	4 ¾ 6	2 ⅓ 4

1 minute timing goal______ Number of problems correct_

Set N [3x6, 6x3, 9x9] Practice on facts through Set N

હ તે દ	୴ଔଠ	∞ ⋈ 🎗	_{r∪} ≱ r∪
∞ ⋈ 🎗	4 정 건	ত প্ৰ ক	∞ %l 2
ᇝ정 6	o 외 🇭	4 욊 2	ه کا چ
_ಒ ଧ ಭ	° ⋈ 2	6 전 2	ده ۱۵ ۲۵ م
o 성 2	2 K 고	_ట ని డ	ω ¾ 5
_ଜ ଧ୍ର ର୍ଚ୍ଚ	ი 성 년	∽ <u>×</u> 49	o 에 &
_ట ని డ	o 제 &	್ದ ಜಿ ಸ	~ ⅓ 49
∼ ⋈ 4	ი გ გ	ω 科 5	4 6 X
4 ¾ 6	∞ ⋈ %	ა გ ჯ	ი გ გ
ত প্র হ	~ 위 🏍	o 정 2	2 × 4

One Minute Timing on facts through Set N

0	×	0	က	ଅ	0	4	엤	∞	က	엤	9
_	옜	∞	7	ଅ	9	6	엤	81	5	되	2
7	۱×۱	49	က	뙤	18	6	낑	27	2	엤	45
2	성	10	_	엤	6	2	ପ୍ତା	15	6	뙤	54
6	옜	8	8	쬤	64	0	ଷ୍ଟା	0	9	뙤	36
7	엤	14	9	엤	12	₩.	엤	7	9	ଅ	18
4	낆	12	9	낆	18	က	뙤	18	8	엤	16
o	×	63	က	윘	15	က	첾	12	7	<u> </u>	14
2	껢	15	₩.	×	7	7	엤	14	6	싱	45
2	엤	9	2	¦	14	6	첾	36	2	엤	4

1 minute timing goal

Number of problems correct__

Set O [3x7, 7x3, 3x8, 8x3] Practice on facts through Set O

ω	엤	72	80	ଷ୍ଟା	5 4	က	뗐	5 4	5	띴	15
9	엤	12	က	옜	2	7	ଷ୍ଟା	21	က	' ×	7
5	ଅ	15	7	엤	7	က	9	2	က	%	5 4
9	ଅ	48	9	젔	12	9	ଅ	8	œ	%	64
က	%	24	က	χ	15	4	ଅ	12	9	ଝା	8
7	ଞ୍ଚା	7	0	엤	8	ო	<u>/x</u>	7	0	윘	81
က	9	18	2	χ <u> </u>	10	∞	었	24	က	χ	15
∞	었	24	က	' ×	7	∞	%	64	7	ଷ	7
4	<u>*</u>	16	က	<u>&</u>	24	2	엤	45	6	×	63
က	<u>/</u> ×l	7	2	<u>×</u>	4	6	6X	81	œ	ପ୍ତା	5 4

One Minute Timing on facts through Set O

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	م گا 5		
	ი გ გ		
² ₩ 0	- 刻 o	o 5 4	- % o
ତ ଧ୍ୟ ଅ	∞ ⋈ 2	୦ ଅ ୦	° ⊗ ⊗
2 ⊠ ≥2	ଦ ଧା ର	- 영 6	~ ଧା ଅ
၀ ဖွု ဝ	رة 21 الخ	∞ ⊗ 2	_ట ని డ
- K	ده کا ک	24 × 3	2 × 4
8 ⊠ 4	9 27 63	~ ≥ ~	୮ ୭୬ ଦ
رد کا 5	4 없 2	4 ¾ 6	∾ Ål 4

1 minute timing goal____

Number of problems correct

Set P [7x8, 8x7, 6x8, 8x6] Practice on facts through Set P

		18									
9	엤	48	က	' ×l	7	7	뗐	56	0	<u>x</u>	0
6	<u>%</u>	54	7	ᅇ	56	က	뗐	24	7	옜	56
∞	匆	48	9	ᅇ	48	9	ଅ	18	80	띴	24
თ	ଷ୍ଟା	8	ß	χ	25	80	χ S	48	9	뗐	48
8	띴	24	7	띴	21	က	 ×	21	8	8	48
က	<u>%</u>	2	7	윘	10	∞	<u> </u>	56	7	ଅ	7
7	쑀	26	œ	<u> </u>	26	_	<u>×</u>	4	ω	<u>x</u>	26
ဗ	% %	24	ω	띴	24	7	%	21	က	뙤	4
80	<u>x7</u>	26	∞	<u>%</u>	48	6	χ 22	45	က	×	21

One Minute Timing on facts through Set P

∞ × ×	[~] ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	D 4	엣 🗴	_{ده} کا	9
~ ⊗ ∝	1 kg 2	2 ∞	≥ 20	× 5	2
~ ½ 67	. ა გე (24 0	<u>ک</u> ا و	~ X	_
2 KJ C	? - 刻 (ာ ၆	22 많	- %	9
o හි රූ	. ∞ ⊗l (4 8 °	ତ୍ଥା ୦	8 ×	48
~ ৯ %	ر الأر	4 5	2 ⊮	∠ 8 <u>×</u>	26
6 % 2	4 M	യ ശ	% %	6 <u>/x</u>	63
e × 5	: ୴ଷ୍ଟା	27	최 4	x 2	14
× 8 ا	} - ⅓ ı	,	ଧ 2	- Ø	6
° ≥ ₹	ဖဆ္သ	4 ∞ 4	≱l 6	0 N	4

1 minute timing goal

Number of problems correct_

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Set
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facts
0
Practice
8x4]
4x8,
8x5,
[5x8,
Q
Set

9	옜	48	80	ଅ	24	5	<u>&</u>	40	ა	ଷ୍ଟା	45
∞	<u>*</u>	32	7	ଅ	7	4	쬤	32	∞	' ×	26
S	엤	10	œ	X	32	80	% 	48	∞	었	40
œ	욊	40	9	옜	48	က	<u>/</u> x	21	7	첾	œ
∞	⋈	26	∞	었	40	ω	<u>*</u>	32	9	옜	48
2	뗏	40	7	뗏	26	80	×	26	2	옜	4
∞	<u>%</u>	48	3	<u>%</u>	24	80	χ	40	က	뗏	5 4
7	ᅇ	26	4	뗏	32	7	낁	21	4	쑀	32
4	<u>*</u>	16	2	옜	40	∞	ଅ	24	∞	<u>%</u>	48
4	뗐	32	ო	<u> </u>	21	7	8	26	80	<u>*</u>	32

One Minute Timing on facts through Set Q

	4	<u>&</u>	32	က	ଅ	6	4	엤	∞	က	엤	9
	_	8	œ	7	ଅ	9	4	<u>%</u>	32	5	되	2
	7	% %	26	က	있	0	თ	됬	6	o	匆	54
ı	7	칪	10	_	<u>&</u>	6	2	뗐	40	~	ջ	9
	თ	엤	81	80	<u>x</u>	48	0	엤	0	9	<u>%</u>	36
	7	낆	51	9	겧	12	τ-	겧	7	80	ξ	40
į	0	匆	0	ω	χ	40	9	<u>&</u>	48	œ	<u>*</u>	32
	∞	<u> </u>	26	က	되	က	_	<u>* </u>	4	7	ଷ୍ଟା	63
	2	8	40	_	<u> </u>	7	æ	뎄	16	-	엤	6
	2	겠	9	7	<u>x7</u>	4	4	X ∣	16	7	뎄	4

1 minute timing goal _____

Number of problems correct

Set R [7x6, 6x7, 7x5. 5x7] Practice on facts through Set R

ιΩ	<u>/x</u>	35	က	띴	6	5	쑀	40	5	Χ	5
9	Ø	12	9	%	48	7	匆	42	5	<u>×</u>	35
5	8	40	7	옞	42	0	옜	54	7	9	42
7	%	56	∞	<u> </u>	26	S	<u>×</u>	35	∞	χI	40
00	χ	40	∞	X ∣	32	80	<u>×</u>	26	7	<u>X</u>	35
7	9X	42	7	χĮ	35	4	윘	32	∞	<u>*</u>	32
00	%	48	ø	었	40	9	' ×'	42	7	%	26
7	끿	35	ဖ	×	42	∞	X ∣	32	9	<u> </u>	42
4	χ (%	32	5	뗐	40	7	ζ	35	œ	<u>%</u>	48
9		45	Ŋ	 	35	9	윘	48	4	%	32

One Minute Timing on facts through Set R

	2	×	35	က	낆	6	4	뎄	œ	က	겧	9
	_	%	œ	œ	×	26	9	½	42	2	ପ୍ଥା	45
	9	<u>×</u>	42	က	있	0	o	되	6	~	되	_
ı	7	χ <u> </u>	19	7	엤	63	2	<u>×</u>	35	Ψ-	옜	9
	4	뗐	32	ა	쏋	40	0	ଷ୍ଟା	0	9	<u>%</u>	36
	7	뎄	4	9	뎄	12	က	엤	9	7	8	45
	0	옔	0	7	匆	42	7	었	35	8	%	32
	-	' ×	7	80	윘	40	_	≱ I	4	7	' ×	14
	7	윘	35	-	۲ <u>۷</u>	7	7	뗐	26	-	<u></u>	6
	2	엤	10	7	½	14	4	<u>*</u>	16	7	엤	4

1 minute timing goal

Number of problems correct

Set S [7x4, 4x7, 6x5, 5x6] Practice on facts through Set S

7	[x²	4	8	<u>x</u>	32	5	%	40	5	匆	0
9	잉	30	1	ζJ	7	7	X ∤	5 8	6	×2	63
ഗ	x	35	^	<u>x</u>	28	7	9 <u>x</u>	45	^	<u>x4</u>	28
rO.	91	30	9	x 2	45	Ŋ	9 X	30	8	ξ <u> </u>	40
∞	징	40	9	ιζ	30	Ŋ	X ¹	35	9	었	30
^	<u>*</u>	28	^	9 <u> </u>	42	9	ίχ ¹	42	വ	<u>x</u> 2	35
^1	8	42	^	윘	35	4	X	5 8	7	χ <u> </u>	35
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One Minute Timing on facts through Set S

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1 minute timing goal_____

Number of problems correct

Set T [5x4, 4x5, 4x6, 6x4] Practice on facts through Set T

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One Minute Timing on facts through Set T

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1 minute timing goal....

Number of problems correct.

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One Minute Timing on facts through Set U

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Number of problems correct

1 minute timing goal _

Set V [all previous sets] Practice on facts through Set V

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∞	쑀	40	4	<u>%</u>	24	9	X ∣	24	4	윘	20
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One Minute Timing on facts through Set V

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1 minute timing goal

Number of problems correct

Set W [all previous sets] Practice on facts through Set W

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One Minute Timing on facts through Set W

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1 minute timing goal

Number of problems correct_

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Goal

Two Minute Multiplication Timing #2

Two Minute Multiplication Timing #4	6 3 8 7 9 4 2 5 9 7 <u>x7</u> <u>x3</u> <u>x3</u> <u>x6</u> <u>x5</u> <u>x8</u> <u>x7</u> <u>x4</u> <u>x9</u> <u>x1</u> 42 9 24 42 45 32 14 20 81 7	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\frac{x3}{21}$ $\frac{x4}{16}$ $\frac{x9}{54}$ $\frac{x2}{8}$ $\frac{x7}{8}$ $\frac{x7}{6}$ $\frac{x7}{30}$ $\frac{x6}{56}$ $\frac{x7}{30}$ $\frac{x8}{56}$ $\frac{x5}{0}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\frac{3}{x5}$ $\frac{2}{x1}$ $\frac{x9}{2}$ $\frac{x6}{x6}$ $\frac{x4}{x4}$ $\frac{x2}{x4}$ $\frac{x4}{x3}$ $\frac{x3}{x3}$ $\frac{x3}{x9}$ $\frac{x9}{45}$ $\frac{x}{45}$ $\frac{x}{45}$ $\frac{x}{45}$ $\frac{x}{45}$	Goal Number of problems correct
Two Minute Multiplication Timing $\#3$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8 8 4 7 0 6 4 0 8 x2 x3 x4 x3 x7 x9 x2 x8 x5 56 56 16 21 0 54 8 0 40	5 4 3 6 9 8 7 9 7 x4 x8 x3 x7 x5 x3 x6 x9 x1 20 32 9 42 45 24 42 81 7	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	498664203 $x \perp 1$ $x \perp 3$ $x \geq 9$ $x \geq 8$ $x \neq 4$ $x \geq 7$ $x \geq 9$ $x \geq 6$ $x \geq 1$ 427724824281803	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Number of problems correct
Two	7 x 5 35	5 x 6 30	2 × 4	∞	⁷	30 × 5	10 x 2	x 4 4 28	Goal

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Goal

Two Minute Multiplication Timing #6

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4 ^X ^X 2 8

Goal

Fwo Minute Multiplication Timing #8

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Two Minute Multiplication Timing $\#10$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Goal Number of problems correct
plication Timing #9	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	9 7 6 9 8 4 4 4 $1 \times 5 \times 2 \times 8 \times 2 \times 9 \times 3$ 9 35 12 72 16 36 12	9 8 5 6 8 4 3 27 x1 x8 x6 x8 x5 x6 3 8 40 36 64 20 18	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Number of problems correct
Two Minute Multiplication	5 4 5 0 x7 x6 x5 x3 35 24 25 0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 2 2 9 <u>x9</u> <u>x4</u> <u>x8</u> <u>x7</u> 0 8 16 63	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	8 4 0 8 x 7 x 2 x 8 x 5 56 8 0 40	5 7 9 7 x4 x6 x9 x1 20 42 81 7	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	GoalN

Where should I begin in Division?

Test to pass Sets A-F

Try each set to see where you should begin practicing your facts. Wait for my signal to begin. Before you begin, enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal ______ Number of problems correct_

Where should I begin?

Test to pass Sets G-I

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Number of problems correct

Where should I begin?

Test to pass Sets M-P

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal _____

Number of problems correct_

Test to pass Sets Q-U

Where should I begin?

Wait for my signal to begin. Before you begin enter your goal for a 15 second timing. You will have 15 seconds to answer as many of the problems below as you can. Write as quickly as you can. Ready, set, go!

Goal.

Number of problems correct_

Set A [1 divided into any number (1-9)]

Set B [any number (1-9) divided into itself]

Practice on facts in Set A

9 3 7 4 6 6 4 8 9

1) 9 1) 3 1) 7 1) 4 1) 6 1) 6 1) 4 1) 8 1) 9

1)5

Z 1) 7

9 (1

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 4
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 1)6
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 1)5
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 1)8
 1)6
 1)1
 1)5

 5
 4
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 5
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 6
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 1)5
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 1)4
 1)6
 1)7

6 (1

9 (1

3 (1) 3

6 (1)

3 (1)

9 (1

Practice on facts in Set B

7)7 **1** 9(9 **4** (1) **4 4 ₽** (4 **† 1** 96 1) 1 1 5)5 **1** 3)3 **1** 1,7 **1 1** 6)6 **1** 6)6 **Z** 1) 7 **1** 8)8 **9** (1)

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8 (1)

3) 3

5)5

1)1

8) 8

Z 1) 7

1 6)6

1 1 1 1 8 1 9)9 5)5 7)7 2)2 1)8 6)6 1 1 4 3 1 1 3)3 5)5 1)4 1)3 9)9 4)4

One Minute Timing on facts in Set A

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5(1

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3 9 8 2 4 2 1 1)3 1)9 1)8 1)2 1)4 1)2 1)1

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3 1) 3

3° (1

6 (1

9 2 5 4 3 4 6 1)9 1)2 1)5 1)4 1)3 1)4 1)6 Number of problems correct ---

1 minute timing goal

One Minute Timing on facts in Set B

8)8 1)3 9)9 4)4 6)6 5)5

1) **5**

E (1)

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1) **4**

1)⁷ 9)⁹ 9 7)⁷ 3)³ 1)5 1

1 6)

8 (1) 8

8) 8

1 6) 6

1) 4 4

1) 5 3) 3 1) 9 8) 8 1) 2 4 2) 2

1) **2**

3) 1

1 6) 6

1) 9 2) $\frac{1}{2}$ 1) $\frac{5}{2}$ 4) $\frac{1}{4}$ 1) $\frac{3}{3}$ $\frac{1}{3}$ 1) $\frac{6}{6}$

9)9

1 minute timing goal _____

Number of problems correct ___

Set C [2 & 3 divided into 6, 2 divided into 4]

Practice on facts in Set C

2) **3**

9 (1

166

8(8

2) 3

2) (2

2² 4

1) 9

1) 3

4)4

5)5

3) **5**

1

Set D [2 & 4 divided into 8, 2 & 5 divided into 10]

Practice on facts in Set D

3)3 5)10 3)6 7)7 2)4 4)8 2)8 1)1 2)10 3
$$2)4$$
 3)6 5)10 4)8 1)3 1)9 2)10 2)6 2)8 1

One Minute Timing on facts in Set C

1) 3

4) 8 8

1) **4**

5)5

2) 6

4)4

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1) 3

2) **4**

2) 2 7

One Minute Timing on facts in Set D

2(1)2

2 5) 10

1 (4)

2) 8

3) **2**

1) 9

3)3

1)5

7)7

1) 9

Z 1)7

3) 2

1)3

4 8 8

1) 5

2) 10

1 8(8

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4 (1) 4

.6 (1)

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7(2

.6

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3) **5**

$$\frac{1}{9}$$
 $\frac{2}{9}$ $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{1}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{6}$ $\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{9}$ $\frac{1}{7}$ $\frac{3}{2}$ $\frac{3}{6}$

1 minute timing goal_

Number of problems correct.

1 minute timing goal

Number of problems correct

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Set E [2 and 6 divided into 12, 2 and 7 divided into 14]

Practice on facts in Set E

Z 2) 14 **6** 12 2) 10 **4** 8 (4) 8 **1**66 **2** 7) 14 2) **4** 5)5 2) 6 2) 12

2 7) 14 3) **2 .6** 2) 12 2) **B 5**) 10 **4** 2) 8 2) 10 2) 14 $\frac{1}{1}$ **.2** 6) 12

3) **5** 2) 10 2) 2 **.6** 2) 12 4° 8 (7) **2** 6) 12 7) 14 9(9 **5**) 10

Z 2) 14

Z 2) 14 2) 12 2) 8 **4 2 1** 6) 12 2) 2 1) 3 2 2 2 7) 14 5) 10 4) 8 2) **2**

Set F [2 and 8 divided into 16, 2 and 9 divided into 18]

Practice on facts in Set F

Z 2) 14 **2** 6) 12 2) 8 2) 18 2 2 7) 14 9) 18 **2** 8) 16 5)5 **₋8** 2) 16 **.6** 2) 12

2 9) 18 4⁽⁴⁾8 _**5** 2) 10 **2** 8) 16 2) 12 **9** 2) 18 2) 16 **.6** 2) 12 **5**) 10 **2** 6) 12 2) 18 $\frac{\mathbf{Z}}{2)14}$ **2** 7) 14 **2** 8) 16 2) 10 **2** 9) 18 4° (4) 8 (4) 2) **3 4** (1) 4

Z 2) 14

One Minute Timing on facts in Set E

4⁽⁴⁾ 1) 4 5) 7 **Z** 2) 14 4 4 4 ٦ 6 6 1) 3

2) 8 4

2) 12

8)8 8 2) 10 **4** (1) **2 2 6 6** 12 5) 10 1) 6 7(2 2 **.6** 7) 14 1) 6 3)**5**

1)₂ **2** 5) 10 **2** (9) 12 2) 4 (2 4)4 2) **4** 3) 2 66 3)3

2 7) 14 **.6** 2) 12 1) 9 **Z** 1)7 3) **5** 1) 3 4) 8 (2 5) 5 2) 10 **Z** 2) 14

One Minute Timing on facts in Set F

2 9) 18 5)5 **Z** 2) 14 **1** 4 (4 **.8** 2) 16 **1**)3 2) 8 4 **.6** 2) 12

1)₂ **2** 5) 10 **2** 6) 12 **.8** 2) 16 4)4 **4** (2 3) **5 2** 9) 18 3)3

7) 14 2) 12 1) 9 **9** 2) 18 3) **2** 1) 3 8) 16 5)5 2) 10 **Z** 2) 14

Number of problems correct

1 minute timing goal

1 minute timing goal

Number of problems correct_

Set G [2-9 divided into any number less than the divisor = \emptyset

Practice on facts in Set G

Set H [9 and 3 divided into 27, 9 and 4 divided into 36]

Practice on facts in Set H

2 6) 12 3) 27 **4** 9) 36 0° (2) 4 **0** 8 (6 9 (8 8) 6 8) 4 0 4 9) 27 **8** 2) 16 **9** 4) 36

2 6) 12

0

8 8 8

2) 18

2 9) 18

2 8) 16

0 (8

4) 1

.8 2) 16

2)1

4 9) 36 **d** (7) **2** 8) 16 2) 18 **5**) 10 2) 1 3) 27 9) 27 4) 36 **8** 2) 16 3) 27 6) 5 **2** 9) 18 **9** (4) 36 **9** 2) 18 8) 5 8) 5 **4** 9) 36 9) 27 3) 2 1) 4

2 9) 18 9) 36 5) 4 **9** 4) 36 5) 3 **2** 8) 16 9) 27 3) 27 2)2 2) 1

.6 2) 12

3) **2**

5) 4 5

2) 16

o 2(6

0 (2) 4

Z 2) 14

2) 18

9) 18

2) 18

2) 1 1

D (9

_**8** 2) 16

2 6) 12

7) 14

8) 5

.0

1) 4 4

0. 4 (7

2 8) 16

.6 2) 12

3) 2

Z 2) 14

2) 10

2 9) 18

.0

One Minute Timing on facts in Set G

9) **D 4** (1) 4 5) 5 $\frac{\mathcal{I}}{2}$ **1** 4 (4) 1)3 2) 8 2) 1 2) 1

9 (8 8) 2) 10 1) 4 2 **-6** 5) 10 1) 6 **.0** 7(2 2 9 7) 14 2) 18

3) 6

1)₂ **2** 5) 10 **2** 6) 12 **....** 2) 16 4) 2 2) **4** 9 (2 2) P **2** 9) 18 3)3 1) 2 1) 5

.2 7) 14 **D** (9 **9** (1 **9** 2) 18 3) **2** 1) 3 **2** 8) 16 5) 4 2) 10 **Z** 2) 14

5)5 **Z** 2) 14 **9** 4) 36 **8** 2) 16 1) 3 2) 8 2) 1

One Minute Timing on facts in Set H

1) 3

9) 27

1) **4**

9 (8 8) 6

2) 10

1) 4 1) 4

2 .6 5) 10 1) 6

3) 27

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2) 18

7) 14

4 9) 36

1)₂ **4** 9) 36 **2** 6) 12 2) 16 **D** 2(4) 2 2) 8 **o** (2 9) 27 3) 3 1) 5

0 1) **9 9** 2) 18 **2** 3)6 1) 3 **9** 3) 27 **D** 5) 4 **9 5** 4) 36 2) 10

2 7) 14

1 minute timing goal.

Number of problems correct.

1 minute timing goal.

Number of problems correct_

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Set I [9 divided into 45, 5 divided into 45, 3 divided into 9]

9) 45

One Minute Timing on facts in Set I

[9 and 6 divided into 54, 4 divided into 16] Set J

Practice on facts in Set J

One Minute Timing on facts in Set J

Set K [9 and 7 divided into 63, 5 divided into 25]

Set L [9 and 8 divided into 72, 6 divided into 36]

Practice on facts in Set L

6) 54

3) 3

6 9) 54

5)5

8 22 (6

2) 63

9(9

7 6)

4 4) 16

8) 72

8 (6

4)3

5) 25

9 (8) 72

7) 63

3) 27

9) 45

9 2) 18

4 9) 36

9(9)

1) 9

9 8) 72

9) 27

7 6) 63

4) 16

9 (9

8 9) 72

5) 25

2 6) 12

2) 63

Practice on facts in Set K

6) 54 3) 3 **2** 9) 18 5) 22 **.6** 9) 54 2) 63 7 29 (6 **4** 4) 16

Z 9) 63 **4** 4) 16 € 2) 10 5) 25 9) 45 **9** 6) 54 **Z** 9) 63 **9** (2 **....** 2) 16 3) 27 **9** 5) 45 9) 45 1 6 6 **9** 2) 18 5) 25 **4** 9) 36 9) 27

9 54 **6**

4) 8 8

9 (2

7 9) (3

.6 9) 54 9) 36 5) 45 **9** (2 5) 25 **4** 4) 16 4 **9** 8 (6 3)3 6) 54 6) 54

9) 54 6

9 (9

.9 5) 45

8 22 (6

5) 25

9 22 (8

0 8 (6

3)3

6) 54

Z 6) 63

One Minute Timing on facts in Set K

9) 45 9) 27 1) 4 1 **6**) 54 2) 12 **7** 63 €3 4) 16 1) 3 5) 22

2) 1

9 (8 8) 6 2) 10 6)5 5) 45 **2** 5) 10 3) 27 **7** 9) 63 4) 8 4) 8 7) 14

₹ 9) 36

1) **2 4** 9) 36 **2** 6) 12 **9** (2 4) 2 4) 2 2) 8 7,7 **.6** 9) 54 3) 1 **5** (6

2 7) 14 **6** 9) 54 3) 9 2) 18 3) **2** 1) 3 7) 63 5) 25 2) 10 **4** 4) 16

One Minute Timing on facts in Set L

9) **28** 9) 45 1) **4 6**) 54 8) 72 **7 4**) 16 1) 3 5) **1**0 2) 1 9(8 8) 6 2) 10 8) **2**2 **9** 5) 45 5) 25 3) 27 Z 6) (8 **4**) 8 7) 14 7) 9) **45**

7) 14 7) 1)**5 9** (9 **2** 6) 12 3) 1 **a** (5 **2**) 18 98 (9 4) D 2) 8 1) 3 9 7) 63 7,7 **8**9) 72 5) 25 2) 10 3) **8 4** 4) 16 9) 36

1 minute timing goal

Number of problems correct.

1 minute timing goal

Number of problems correct.

Set M [3 and 4 divided into 12, 7 divided into 49]

 $Set\ N\ [3 \ and 5 \ divided into 15, 8 \ divided into 64]$

Practice on facts in Set N

6) 54

5) 15

8)8

3) 15

8 9) 72

Z 7) 49

6) 34 9

9) 5

4) 12

8) (8 49 (9

Practice on facts in Set M

6) 54 3) 9 **0** 8 (6 3) 12 9) 72 4) 12 **9** 22 (8

1 7) 49 4) 12 5) 25 **6** (8 7) 63 3) 27 **4** 3) 12 2) 10 **2** 8) 16

9) 36 6) 36

9) 18 1) 9 **6** (8) (8) **.6 .9 .7 .8 .4 .6** 9) 54 8) 72 7) 49 9) 72 3) 12 6) 36 **8** 9) 72 7 8) (6 **4** 4) 16 **Z** 7) 49 **3** 4) 12 5) 25 **9 3 4** 4) 36 4) 12 3) 3 **4** 3) 12

9 (2

3) 15 **Z** 7) 49 8) 64 8) 64 98 (9 4) 12 8) 72 **4** 3) 12 **5**) 15 9) 72 **9** 8) 72 **Z** 2) 14 **3 3 3** 5) 15 2) 6 **9** 29 **4** 4) 16 **.6 .7** 9) 54 7) 49 **3** 5) 15 8) (8 2) 10 3) 12 4) 12 5) 25 3)3 **9 8** 4) 36 8) 64 3 **.6 .5** (6) 36 (3) 15 3) 12 3) 15

One Minute Timing on facts in Set M

8 22 (6 **Z** 7) 49 1)4 **6**) 54 9 (8 8) **Z** 9) 63 4) 12 1) 3 **2** 5) 10

2) 10

9) 72

Z 7) 49

1) **4**

9) 36 9) 36

9 (8 8) 6

3) 15

4) 12

1) 3 1) 3

5) 25

8) 64 8) 64

One Minute Timing on facts in Set N

8) (8 49 (8

9 (8) 72

9 5) 45

3 5) 15

7) 14

2 8) 16

1)₂

2 8) 16

2 6) 12

, 69 (7

4) 12

7)7 2)8

, E9 (6

3) 9

3) 15

9 (8) 72 2) 1 **9** 22 (8 **9** 5) 45 5) 25 **4** 3) 12 **Z** 9) 63 4) 8 9) 45 7) 14

1)₂ 9£ (9 **2** 6) 12 **3 9** 4) 12 7) 63 2) 8 **8 1** 9) 72 7) 7 **4** 3 9) 36 3) 9

2 7) 14 **1**666 **4** 3) 12 2) 18 98 (9 1) 3 **L 9** 7) 63 5) 25 2) 10 7) 49

1 minute timing goal

Number of problems correct

2 7) 14

966

4 3) 12

9 2) 18

98 (9

1) 3

7) 63 **9**

2 5) 10

2) **3**

3 5) 15

Number of problems correct 1 minute timing goal

Set O [3 and 6 divided into 18, 9 divided into 81]

Practice on facts in Set O

1 minute timing goal

Number of problems correct

 $\mathbf{Set}\;\mathbf{P}\;$ [3 and 7 divided into 21, 3 and 8 divided into 24]

Practice on facts in Set P

3) 15

6 (6

3) 12

Z 2) 14

3 5) 15

.6 3) 18

9) 54

3)3

8) (8

.3 6) 18

One Minute Timing on facts in Set P

1 minute timing goal

Number of problems correct

Set Q [8 and 7 divided into 56, 8 and 6 divided into 48]

Set R [8 and 5 divided into 40, 8 and 4 divided into 32]

Practice on facts in Set R

3) 24

8) 48

8) 40 40

3) 18

9 (1

8) 32

4) 32

7) 56

8) 24 24

5) 40

8) 3**4**

4) 32

7) 56

3) Z1

6) 48

8) 50

5) 40

6) 81

7 8) 56

9(9

Practice on facts in Set Q

3) 24 8) 24 24 8) 56 3) 18 1) 9 3) Z1 7) 56 **8** (9) 6) 18

6 8) 48

6) 48 3) 24 29 29 20 **Z** 3) 21 6) 18 7) 21 8) 18

9) 81

Z (8

1 9(9

7) 56

8) 24 8) 24

Z 8) 56

3) 18

3) 24

6) 48 6)

73 73 **33 8** (9 8) 48 **6** 81 **Z** (8 **8** (6 7) 14 **Z** (8 5) 15

8) 48

7) 21 21

8) 24 24

7) 56

2) 18

8) 40 8) 32 3) 24 8) 24 24 5) 40 **8** (9 **Z** 8) 56 4) 32 8) 55

8) 8) 48

7) 21

Z 8) 56 3) 21 8) 32 8) 48 6) 48 5) **80** 4) 32

23 ZZ

7) 56

One Minute Timing on facts in Set Q

9 81 7) 49 1) **4 7** 3) 21 9 (8 8) 6 6) 48 4) 12

1) 3

5) 22

25 (8 8) 56

7) 23 7) 26 26 5) 45 3) 2**4** 3) 12

9) 72

4) 12

98 (9 9) 39

6 8) 48

8) 3 8) 48 48 **9**69 4 (4 8 (4 2) **4 Z** 8) 56

7 7 8) (6

8 24 24

Z 3) 21

8 (6

7) 56

2 14 (7 3) 24 34 **4** 3) 12 7) 21 **3** (9) 1) 3

5) 10

2) 3

8 (9

One Minute Timing on facts in Set R

8) 32

6 81

7) 21 7) 56 5) 22 3) 24 3) 12 9) 72 4) 32 9E (9

5) 40

8 84 84

8 **6**4

8) 3 8) 40 **9**69 4) 32 2) **4** Z (8 $\frac{1}{1}$ 8) 24 8) 24 **Z** 3) 21

9) **8**

2 7) 14

Number of problems correct 1 minute timing goal

1 minute timing goal.

Number of problems correct_

Set S [7 and 6 divided into 42, 7 and 5 divided into 35]

Practice on facts in Set S

Set T [7 and 4 divided into 28, 6 and 5 divided into 30]

Practice on facts in Set T

2) 30 6) 30 **7** (9 **Z** (4) 28 7) **4**2 7) 35

7) 28

1) 3

6 8) 48

8) 40

Z (2

Z (9

8) **4**

4) 32

7) **4**2

7) 35

7) 56

8) 5

1) 3

Z 5) 35

7 33 **5** 3) ZI 6) 48 5) 35 5) 40

4) 28

9 **?**2

8) 3**4**

7) 42

7) 35

Z (8

6) 48

5) **Z**

5) 40

6 81

Z 8) 56

Z (9

5) 30 5) 30

7) 28

4) 32 8) 40 e) 30 7) 35

8) 32

4) 28

7) 42 7)

7) 36

Z (9

7) 35

6) 48

5) 40

8) 48 8) 48

Z (2

4) 32

8) 40

7) 42

7) 28 **4**

Z 6) 42

2) 30

8 (2 2) 30 8) 32 **Z** (9 7) 28

7) 42

Z (4) 28 5) Z 6) 30 7) 14

7) 42 8) 40 40 **8** (4) 32 **Z** (9 8) 32 8) Z

7) 35

5) 40

5) Z

7) 14

One Minute Timing on facts in Set T

5) 30

7) 12

5)4

Z 3) 21

8 8 8

6) 48

4) 12

7) 14 14

5) 22

7) 28

8 84 84

7) 21

6) 30

5) 45

3 9 9

3) **4**

8 22 (6

4) 28

1) 5

Z (2

7) 35

8)3

7) 28

Z (9

2) 30

2) **4**

Z 8) 56

7,7

7) **4**2

Z (8

2 7) 14

5) 40

4) Z8

7) 21

5 (9)

1) 3

8) 3**4**

5) 10

6) 30

9) 27

One Minute Timing on facts in Set S

6 (8 7) **4**2 1) 4 (1 3) Z1 8) 8 6) 48 4) 12

7) 14 7)

5) 45

7) 35

8 **4**4

7) 21 **Z** (9 5) 22 3) 24 3) **4**

8) 72

4) 32 4) 32

9(9)

5) 35

8) 3 8) 50 **7** 6) 42 4) 32 2) **4**

Z 8) 56

 $\frac{\mathcal{I}}{1)^7}$

7) 42

∡ 3) 21

7) 35

7) 14 5) 40 5) 35 7) 27 **5** (9) 1)3

8) 32

2 5) 10

2) 3

6) 48

1 minute timing goal

Number of problems correct_

1 minute timing goal

Number of problems correct

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Set U [4 and 5 divided into 20, 6 and 4 divided into 24]

Set V [all previous sets]

Practice on facts in Set V

4) 24 4) 24

5) 15

4 (4

8) 32

9) 27

4 6) 24

7) 49 4) 20

7) 35

7) 28

2) 30 2) 30

7) 28

5) 20

3) 1

9 (1

3 6) 18

4) 20

6) 30

Practice on facts in Set U

4) 24 45 **Z** 5) 35 1) **4** 5) 20 9 30 9 30 **4** 6) 24 **.6 .5** 7) 42 4) 20 7) 35

7) 28

2) 30 7) 28 5) 20 3) 21 ' **4** 6) 24 **Z** 6) 42 4) 24 **Z** 4) 28 4) 20

6) 30

7) 42 4) 20 2) 30 4) 36 5) 20 6) 30 7) 35 **6** 4) 24

Z 4) 28

4€ (9

4 6) 24 **Z** 4) 28 **Z** 5) 35 **.6** 5) 30 1 8)8 **Z** 6) 42 **4** 7) 28 **4 5** 5 20 4) 20

4) 24

.6 7) 42 **4** 6) 24 4) 20 20 **Z** 4) 28 **5**) 10 **Z** (2 **9** (2 **4**) 16 5) 20 2) 3 6) 30 4) 24 5) 20 8) 40 7) 21 6) 12 **2** 7) 14 **Q** (4) 3 **Z** (4) 28 **4** 6) 24

One Minute Timing on facts in Set U

2) 30 7) 42 5) 4 **∡** 3) 21 1) 8 4) 20 4) 12 **2** 7) 14 5) 30

6) 24

8) (8 **4** 6) 24 6) 30 **4** 5) 20 3) **3 4** 3) 12 **8** 22 (6 4 (4 4 (4 1) 5 **Z** (2

4) 24 4) 24 0 (8 8) 3 7) 28 **2** (9) 12 5) 25 **4** (2) 8 **Z** 8) 56 77 4) 20 **Z** (8

7) 14 7) 5) 40 **Z** 4) 28 7) 21 2) **.3** 6) 18 1) 3 4) 24 4) 24 5) 20 e) 30 9) 27

Number of problems correct_

1 minute timing goal

2 5) 10 7) 42 5)5 One Minute Timing on facts in Set V 3) 27 1) 8 4) 20 4) 20 4) 12 **2** 7) 14 **.6** 5) 30 **4** (9) 24

7 79 4) 24 8) 3 7)5 **2** 6) 12 5) 25 2) 8 **Z** 8) 56 7) 28 4) 20 **7** 3) 21

3 5) 15 **Z** 4) 28 7) 21 **.3** 6) 18 3) 3 4) 24 5) 20 6) 30 9) 27

1 minute timing goal.

Number of problems correct_

Division Two Minute Timing #1

$$\frac{7}{6)42}$$
 $\frac{2}{5)10}$ $\frac{7}{6)35}$ $\frac{8}{7)56}$ $\frac{2}{224}$ $\frac{2}{3)6}$ $\frac{3}{2)6}$ $\frac{6}{4)24}$ $\frac{2}{4)8}$ $\frac{5}{2)10}$

$$\frac{9}{2)18} \quad \frac{7}{2)14} \quad \frac{6}{9)54} \quad \frac{7}{1)7} \quad \frac{2}{8)16} \quad \frac{1}{5)5} \quad \frac{4}{4)16} \quad \frac{8}{2)16} \quad \frac{5}{6)30} \quad \frac{4}{2)8}$$

$$\frac{9}{4)36} \quad \frac{3}{3)9} \quad \frac{3}{9)27} \quad \frac{3}{4)2} \quad \frac{0}{5)45} \quad \frac{9}{8)72} \quad \frac{0}{9)1} \quad \frac{4}{9)36} \quad \frac{7}{9)63}$$

5) 25

$$\frac{3}{8)\,24} \quad \frac{9}{1)\,9} \quad \frac{3}{4\,)12} \quad \frac{3}{7)\,21} \quad \frac{3}{8)\,4} \quad \frac{0}{5\,)\,15} \quad \frac{3}{8)\,8} \quad \frac{1}{6\,)\,1} \quad \frac{0}{2)\,2} \quad \frac{1}{1\,)\,3}$$

$$\frac{1}{9)9} \quad 3)\overline{21} \quad \frac{2}{8)64} \quad \frac{8}{3)15} \quad \frac{5}{3)12} \quad 7)49 \quad 1)4 \quad \frac{4}{13} \quad \frac{8}{3)24} \quad 9)81 \quad 3)18$$

$$\frac{\mathbf{6}}{5)30} \quad \frac{\mathbf{2}}{7)14} \quad \frac{\mathbf{6}}{1)6} \quad \frac{\mathbf{2}}{6)12} \quad \frac{\mathbf{6}}{8)48} \quad \frac{\mathbf{8}}{5)40} \quad \frac{\mathbf{4}}{8)32} \quad \frac{\mathbf{9}}{7)63} \quad \frac{\mathbf{4}}{5)20} \quad \frac{\mathbf{4}}{7)28}$$

$$\frac{7}{4)28} \quad 6) \frac{8}{48} \quad 8) \frac{5}{40} \quad 7)35 \quad 8) \frac{2}{56} \quad 7) \frac{6}{42} \quad 4) \frac{5}{20} \quad 4) \frac{8}{32} \quad 6) \frac{4}{24} \quad \frac{8}{2) 16}$$

Goal _

Division Two Minute Timing # 2 $\frac{2}{2\sqrt{4}}$ $\frac{2}{3\sqrt{6}}$ $\frac{7}{6/42}$ $\frac{2}{5\sqrt{10}}$ $\frac{7}{5\sqrt{35}}$ $\frac{8}{7\sqrt{56}}$ $\frac{3}{2\sqrt{6}}$

$$\frac{2}{2)4} \quad \frac{2}{3)6} \quad \frac{2}{6)42} \quad \frac{7}{5)10} \quad \frac{2}{5)35} \quad \frac{7}{7)56} \quad \frac{8}{2)6} \quad \frac{3}{4)24} \quad \frac{6}{4)8} \quad \frac{2}{2)10}$$

$$\frac{8}{9)72} \quad \frac{9}{6)54} \quad \frac{3}{6)18} \quad \frac{5}{9)45} \quad \frac{5}{6)5} \quad \frac{0}{8)4} \quad \frac{0}{1)8} \quad \frac{8}{3)27} \quad \frac{9}{9)18} \quad \frac{2}{6)36}$$

$$\frac{0}{8)4} \quad 5)\frac{3}{5} \quad \frac{3}{5} \quad \frac{9}{19} \quad \frac{3}{4}, \frac{3}{12} \quad 7)\frac{3}{21} \quad 8)\frac{1}{8} \quad \frac{0}{6}, \frac{1}{1} \quad 2)\frac{1}{2} \quad 1)\frac{3}{3}$$

$$\frac{2}{8)16} \quad 5)\frac{1}{5} \quad \frac{9}{2)18} \quad \frac{7}{2)14} \quad 9)\frac{6}{9} \quad \frac{7}{17} \quad \frac{4}{16} \quad \frac{8}{2}, \frac{8}{16} \quad \frac{5}{6}, \frac{5}{30} \quad 2)\frac{4}{8}$$

$$\frac{2}{8)16} \quad 5)5 \quad \frac{1}{2)18} \quad \frac{9}{2)14} \quad \frac{7}{9)54} \quad \frac{6}{1)7} \quad \frac{7}{4)16} \quad \frac{4}{2)16} \quad \frac{8}{6)30} \quad \frac{5}{2)8} \quad \frac{4}{2)8}$$

$$\frac{0}{4)2} \quad \frac{9}{5)45} \quad \frac{5}{5)25} \quad \frac{9}{4)36} \quad \frac{3}{3)9} \quad \frac{3}{9)27} \quad \frac{9}{8)72} \quad \frac{9}{9)1} \quad \frac{9}{9)36} \quad \frac{4}{9)63}$$

$$\frac{4}{3)12} \frac{7}{7)49} \frac{1}{999} \frac{1}{3)21} \frac{2}{8964} \frac{8}{3)15} \frac{5}{13} \frac{4}{13} \frac{8}{3324} \frac{9}{9981} \frac{6}{3318}$$

$$\frac{6}{8)48} \quad \frac{8}{5)40} \quad \frac{6}{5)30} \quad \frac{2}{7)14} \quad \frac{6}{116} \quad \frac{2}{6)12} \quad \frac{4}{8)32} \quad \frac{9}{7)63} \quad \frac{4}{5)20} \quad \frac{4}{7)2}$$

Division Two Minute Timing # 3

$$\frac{8}{1)8}$$
 $\frac{9}{3)27}$
 $\frac{0}{6)5}$
 $\frac{0}{8}$
 $\frac{0}{9}$
 $\frac{1}{2}$
 $\frac{1}{2}$

~|88

$$\frac{3}{2)6} \frac{6}{4)24} \frac{7}{5)35} \frac{8}{7)56} \frac{2}{2)4} \frac{2}{3)6} \frac{2}{6)42} \frac{7}{5)10} \frac{2}{4)8} \frac{2}{2)10}$$

$$\frac{\mathbf{6}}{54} \quad \frac{\mathbf{7}}{1)7} \quad \frac{\mathbf{2}}{8)16} \quad \frac{\mathbf{2}}{5)5} \quad \frac{\mathbf{9}}{2)18} \quad \frac{\mathbf{7}}{2)14} \quad \frac{\mathbf{5}}{6)30} \quad \frac{\mathbf{4}}{2)8}$$

$$\frac{4}{4} \quad \frac{8}{16} \quad \frac{6}{2)16} \quad \frac{7}{9)54} \quad \frac{2}{117} \quad \frac{2}{8)16} \quad \frac{1}{5)5} \quad \frac{9}{2)18} \quad \frac{7}{2)14} \quad \frac{5}{6)30} \quad \frac{4}{2)8}$$

$$\frac{4}{1)^4} \frac{8}{3)^{24}} \frac{8}{8)^{64}} \frac{8}{3)^{15}} \frac{5}{3)^{12}} \frac{4}{7)^{49}} \frac{7}{9)^9} \frac{1}{9)^{21}} \frac{7}{9)^{81}} \frac{9}{3)^{18}} \frac{6}{3)^{18}}$$

$$8) \overline{32} \quad 7) \overline{63} \quad 1) \overline{6} \quad 6) \overline{12} \quad 8) \overline{48} \quad 5) \overline{40} \quad 5) \overline{30} \quad 7) \overline{14} \quad 5) \overline{20} \quad 7) \overline{28}$$

$$\frac{\mathbf{5}}{4)\,20} \quad \frac{\mathbf{8}}{4)\,32} \quad \frac{\mathbf{5}}{8)\,40} \quad \frac{\mathbf{5}}{7)\,35} \quad \frac{\mathbf{5}}{8)\,56} \quad \frac{\mathbf{7}}{7)\,42} \quad \frac{\mathbf{6}}{4)\,28} \quad \frac{\mathbf{7}}{6)\,48} \quad \frac{\mathbf{8}}{6)\,24} \quad \frac{\mathbf{4}}{2)\,16}$$

<u>4</u>|8 **Division** Two Minute Timing # 4 $\frac{6}{154} \frac{7}{117} \frac{2}{8116} \frac{1}{515} \frac{9}{2118} \frac{7}{2114} \frac{4}{4116}$

$$\frac{6}{9)54}$$
 $\frac{7}{17}$ $\frac{2}{8)16}$ $\frac{2}{5)5}$ $\frac{1}{2)18}$ $\frac{9}{2)14}$ $\frac{7}{4)16}$ $\frac{4}{2)16}$ $\frac{8}{6)30}$

$$\frac{3}{3)9} \quad \frac{3}{9)27} \quad \frac{1}{4)2} \quad \frac{9}{5)45} \quad \frac{9}{5)25} \quad \frac{9}{4)36} \quad \frac{9}{8)72} \quad \frac{0}{9)1} \quad \frac{4}{9)36} \quad 9)$$

$$\frac{3}{4)12} \frac{3}{7)21} \frac{3}{8)4} \frac{0}{5)15} \frac{3}{8)24} \frac{3}{1)9} \frac{9}{8)8} \frac{1}{6)1} \frac{0}{2)2} \frac{1}{1)3}$$

$$\frac{7}{5)35} \frac{8}{7)56} \frac{2}{2)4} \frac{2}{3)6} \frac{2}{6)42} \frac{7}{510} \frac{2}{2)6} \frac{3}{4)24} \frac{6}{4)24} \frac{2}{4)8} \frac{2}{2)10}$$

2) (6 9) (3

 $\frac{3}{3)9}$ $\frac{3}{9)27}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

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8) 72

$$\frac{8}{8)\,64} \quad \frac{5}{3)\,15} \quad \frac{4}{3)\,12} \quad \frac{7}{7)\,49} \quad \frac{1}{9)\,9} \quad \frac{7}{3)\,21} \quad \frac{4}{1)\,4} \quad \frac{8}{3)\,24} \quad \frac{9}{9)\,81} \quad \frac{6}{3)\,18}$$

$$\frac{6}{1)6} \quad \frac{2}{6)12} \quad \frac{6}{8)48} \quad \frac{8}{5)40} \quad \frac{6}{5)30} \quad \frac{2}{7)14} \quad \frac{4}{8)32} \quad \frac{9}{7)63} \quad \frac{4}{5)20} \quad \frac{4}{7)28}$$

Goal

3) 6 2)₄ 7) 56 **Division** Two Minute Timing # 5 $\frac{2}{510}$ $\frac{2}{4)8}$ $\frac{5}{210}$ $\frac{5}{20}$ $\frac{3}{20}$ $\frac{6}{4)24}$ $\frac{7}{5035}$ $\frac{8}{7)56}$

6) 42

e (2) 18 6) 18

8) 24 24 <u>s) 13</u> 1)3 8)8 6 2)2

<u>စ|</u>6(1

5) 25 5) 45 $\frac{3}{9)27} \frac{0}{4)2}$ $\frac{9}{4)36} \quad \frac{4}{9)36} \quad \frac{7}{9)63} \quad \frac{9}{8)72} \quad \frac{0}{9)1} \quad \frac{3}{3)9}$

 $\frac{6}{3)18} \quad \frac{4}{1)4} \quad \frac{8}{3)24} \quad \frac{8}{8)64} \quad \frac{5}{3)15} \quad \frac{4}{3)12} \quad \frac{7}{7)49} \quad \frac{1}{999}$ **6**] 8(6 3) 21

5) 30 **8**) 40 8) 48 6) 12 $\frac{4}{7)28} \frac{4}{8)32} \frac{4}{7)63} \frac{6}{1)6}$ <u>5) 20</u> **2**] ⁽⁷

4) 28 6) 24 2 16 4) 20 4) 32 8) 40 7) 35 8) 56 7) 42**8** (9)

Number of problems correct Goal

6) 30 6) 30 8) 16 8) 16 **Division** Two Minute Timing # 6 $\frac{4}{116} \frac{1}{555} \frac{9}{2518} \frac{7}{2514} \frac{8}{2516} \frac{6}{954} \frac{7}{157}$ 4) 16

3) 18 **6**| 18 (6 $7)49 \over 7)49 \overline{999} \overline{999} \overline{3}21 \overline{1} \overline{3}24 \overline{8} \overline{8} \overline{8} \overline{15} \overline{3} \overline{15} \overline{4}$ **4**|⁵/₄

8)328)328)348)368)368)378)378)378)378)378)388)388)388)388)388)398)30

2) 16 6) 24 $\frac{\mathbf{6}}{7)42} \quad \frac{\mathbf{7}}{4)28} \quad \frac{\mathbf{8}}{6)48} \quad \frac{\mathbf{8}}{4)32} \quad \frac{\mathbf{5}}{8)40} \quad \frac{\mathbf{5}}{7)35} \quad \frac{\mathbf{5}}{8)56}$ 4) 20

7 6)63 9)<u>36</u> <u>4</u> 0 $\frac{3}{3)9}$ $\frac{3}{9)27}$ 8) 72

6)36 **6** 9 18 $\frac{0}{8)4}$ 9)72 6) 54 **∞**|∞ ∞

ol[∞] √ $\frac{3}{4)12}$ $\frac{3}{7)21}$ **O**|__ $\frac{3}{8)24}$ $\frac{9}{1)9}$ 5) 13 **~**|∞ ∞

2) 10 3)₆

Number of problems correct Goal

Division Two Minute Timing #7 ~|⊗ | |-

5) 15 <u>د) ر4</u> <u>ျာ</u> **1** 2) 2 စ|⁽¹ **ା**ତ

8) 24 8) 24

5) 25 $8)72 \ 9)1 \ 4)36 \ 9)36 \ 9)63 \ 3)9 \ 9)27 \ 5)45$

0|2

7 6) 42 3) e **8** (7) **8** (9) $\frac{5}{2)10}$ $\frac{7}{5)35}$ **6** 5) 10 4) 6 6 6

2) <mark>(3</mark>

2|²/₄

2) 18 5) 5 1)7 9) 54 $\frac{7}{2)14} \quad \frac{5}{6)30} \quad \frac{4}{2)8}$ 2) **16 4** 16

8) 16

က|ေ 6) 54 ol[∞] 4 6) 36 0 0 6) 36 0) 5 9) 18 9)45 3) <u>27</u>

7) 49 3) 15 ∞|8 ∞|49 3) 18 3) 18 <u>9</u> 81 $\frac{7}{3)21}$ 3) 24 3) 24 <u>4</u>|[±] 3) 12

∞|∞ ∞

9) 72

5) 30 5) 40 **2** (9) 12 $\frac{2}{7)14} \frac{4}{520} \frac{4}{728} \frac{6}{106}$ **9** (7 8) <u>32</u> 8) 48 8) 48

4) 28 8) 56 4) 20 4) 32 6) 48 6) 24 2) 16 8) 40 7) 35 7) 42

Number of problems correct_ Goal_

Division Two Minute Timing # 8 $\frac{8}{132}$ 8) $\frac{5}{80}$ $\frac{5}{100}$ $\frac{7}{100}$ 8) $\frac{7}{80}$ 6) $\frac{4}{100}$ 7) $\frac{5}{100}$ 6 **8**) 32

2) 16

4) 28 7) 42

5) 25 $\frac{3}{3)9}$ $\frac{3}{9)27}$ $\frac{0}{4)2}$ $\frac{4}{9)36}$ $\frac{9}{8)72}$ $\frac{9}{5)45}$

01<u>6</u>

9) (4) 36

6) الأ 6) 54 2 8 9) 18 1) 8 8) 72 6) 72 0|₄

<u>0</u>20

3) 27

6) 36

9)45

2) 14 <u>9</u>|3 5)5 4) [4 3) (4 3) 6) 30 8) I6 $\frac{6}{9)54}$ $\frac{7}{1)7}$

2) 16

4[8

3) 18 3) 18 3) 21 <u>6(6</u> 7) 49 **4**|[∵]4 $\frac{4}{3)12} \quad \frac{9}{9)81}$ 8) 64 3) 15

3) 24

4|7) 28 5) 30 5) 40 8) 32 5) 20 5) 20 8) 8) 8) 6) **1**2 وا ق

<u>က</u>ြ **စ**ြင့် 8) 24 8) 24 5) IS **~**|8 8 8 2)2 o|[∞] √ 7) 21 <u>4) 12</u> **ା**୍ଚ

2) 10 2) 10 2) 10 2) 10 6) 42 3) e **2 3** 4) 8 2) 6 $\frac{7}{5)35} \quad \frac{8}{7)56} \quad \frac{2}{2)4}$

Number of problems correct_ Goal

<mark>ယ</mark>|(၅

$$\frac{4}{1)^4} \quad \frac{8}{8)64} \quad \frac{5}{3)15} \quad \frac{8}{3)24} \quad \frac{7}{3)21} \quad \frac{4}{3)12} \quad \frac{9}{9)81} \quad \frac{6}{3)18} \quad \frac{7}{7)49} \quad \frac{1}{9)9}$$

$$\frac{1}{8)8} \quad \frac{3}{4)12} \quad \frac{3}{7)21} \quad \frac{3}{6)1} \quad \frac{9}{1)9} \quad \frac{9}{8)4} \quad \frac{0}{2)2} \quad \frac{1}{1)3} \quad \frac{3}{5)15} \quad \frac{3}{8)24}$$

$$8) 72 \over 2) 39 \overline{9}$$

$$8) 72 \overline{7}$$

$$8) 72 \overline{9}$$

$$9) 27 \overline{9}$$

$$9) 1 \overline{1}$$

$$4) 36 \overline{9}$$

$$9) 36 \overline{9}$$

$$9) 63 \overline{9}$$

$$9) 45 \overline{5}$$

$$9) 55 \overline{5}$$

$$\frac{7}{5)35} \frac{8}{7)56} \frac{6}{4)24} \frac{2}{5)10} \frac{2}{2)4} \frac{2}{4)8} \frac{2}{2)10} \frac{5}{3)6} \frac{2}{6)42}$$

2) (၁)

$$\frac{4}{4)16} \frac{6}{9)54} \frac{7}{117} \frac{8}{2116} \frac{7}{2114} \frac{2}{8116} \frac{5}{6)30} \frac{5}{218} \frac{4}{218} \frac{1}{218} \frac{9}{2118}$$

$$8) 32 1) 6 6) 12 7) 63 7) 14 8) 48 5) 20 7) 28 5) 40 5) 30$$

$$\frac{\mathbf{5}}{4)20} \quad 8)40 \quad 7)35 \quad 4)32 \quad 6)48 \quad 8)56 \quad 6)24 \quad 2)16 \quad 7)42 \quad 4)28$$

Division Two Minute Timing # 10
$$\frac{9}{218} \frac{2}{816} \frac{5}{6)30} \frac{8}{2116} \frac{6}{9)54} \frac{7}{117} \frac{4}{4)16} \frac{1}{5)5} \frac{7}{2)14}$$

$$\frac{1}{9)9} \quad \frac{4}{3)12} \quad \frac{4}{9)81} \quad \frac{9}{3)24} \quad \frac{8}{8)64} \quad \frac{8}{3)15} \quad \frac{5}{1)4} \quad \frac{4}{7)49} \quad \frac{7}{3)21} \quad \frac{7}{3)18}$$

$$\frac{3}{8)24} \quad 8)\frac{\mathbf{0}}{4} \quad \frac{1}{2)2} \quad 6)\frac{1}{1} \quad \frac{\mathbf{0}}{4)12} \quad \frac{3}{7)21} \quad 8)\frac{\mathbf{1}}{8} \quad 5)\frac{\mathbf{3}}{15} \quad 1)\frac{\mathbf{9}}{9} \quad 1)\frac{\mathbf{3}}{3}$$

$$\frac{5}{5)25} \frac{0}{4)2} \frac{4}{9)36} \frac{0}{9)1} \frac{3}{3} \frac{3}{9)27} \frac{3}{8)72} \frac{9}{5)45} \frac{9}{4)36} \frac{9}{9)63}$$

$$\frac{7}{6)42} \frac{2}{2)4} \frac{2}{4)8} \frac{2}{4)24} \frac{6}{5|35} \frac{7}{7|36} \frac{8}{2|6} \frac{3}{3|6} \frac{2}{5|10} \frac{2}{2|10}$$