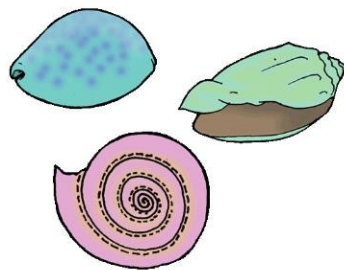


MATH PACKET



for

Students Entering the **Fourth Grade**

Students Name: _____

First and Last

Student's **Fourth Grade Homeroom** Teacher: _____

Parent's Signature: _____

INTRODUCTION

Welcome to the summer math packet for students entering fourth grade. Activities are designed to support instruction in the MCPS curriculum in both its content and presentation. Activities may be done independently or with a parent, guardian, or older brother or sister. Talking about the problem can be an important part of completing some activities.

- Students set their own goals for completing math activities.
- Students use the math packet to complete and record responses for the activities.

Summer Packet Content:

Standard 1: Operations and Algebraic Thinking

- Activity A: All Purpose Seating Plan
- Activity B: Multiplication Beach Towel Table

Standard 2: Number and Operations in Base Ten

- Activity A: Cars Per Hour
- Activity B: Decompose or Compose

Standard 3: Number and Operations—Fractions

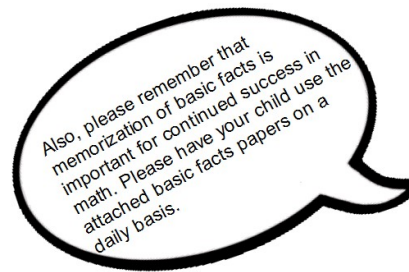
- Activity A: "Whole" in One Miniature Golf
- Activity B: Fraction Concentration

Standard 4: Measurement and Data

- Activity A: Summer Music Festival
- Activity B: Vegetable Garden

Standard 5: Geometry

- Activity A: Categories
- Activity B: Quadrilaterals



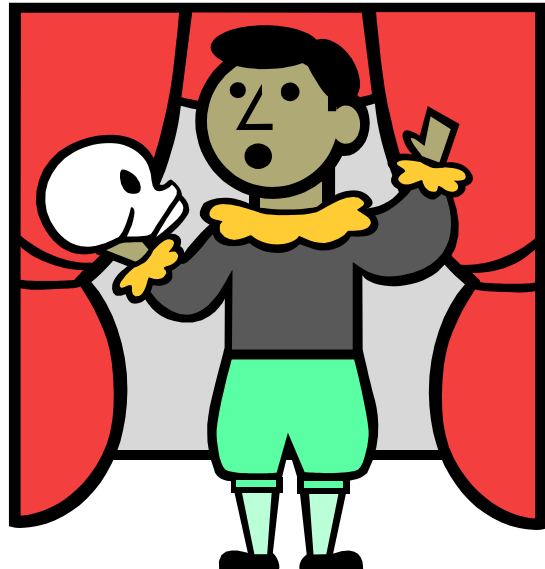
Review of Grade 3: Operations and Algebraic Thinking, Activity A

All Purpose Seating

Directions: Read through the following problem and answer the questions. Use the space on the back of this page to complete your work. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

Brittany was helping Mrs. Smith set up chairs in the all-purpose room for a performance of her class play. They needed to seat 60 parents. Mrs. Smith wanted to put the same number of chairs in each row.

After thinking about Mrs. Smith's plan, Brittany suggested a different arrangement for the same number of seats. She explained that, by putting 5 more chairs in each row, they could have 2 fewer rows, and parents in the back row would be able to see better.



- A) How many chairs were in each row of Brittany's plan? Explain how you solved the problem in the space on the back of this page.

CHALLENGE:

- B) Write a similar problem involving two possible sets of rows and seats per row for 180 students. Show a solution for your problem.

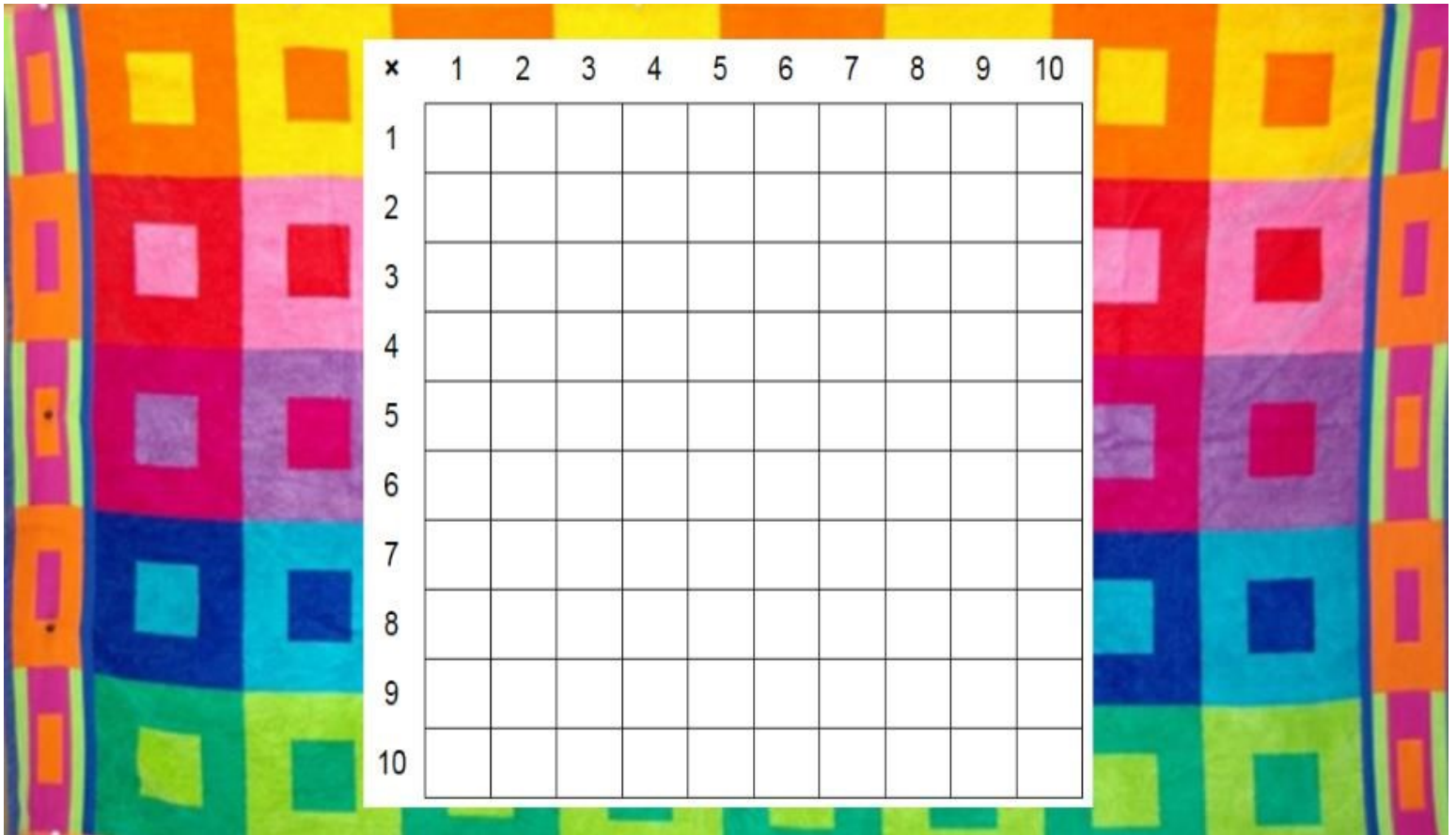
REMEMBER to show how you know your answers are correct.

Review of Grade 3: Operations and Algebraic Thinking, Activity B

Multiplication Beach Towel Table

Directions: Read through the following problem and answer the questions. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

Your family bought you a beach towel for your trip to Ocean City. The towel is a blank multiplication table. After a long swim in the ocean, you decide to take a break. Cut and correctly glue the multiplication puzzle pieces on the towel. Explain your thinking in the box on the next page



4	6	
6	9	12

16	
18	27
20	30

	42	49
	48	
45	54	

72	80	
81		
90		
	15	
6	12	18

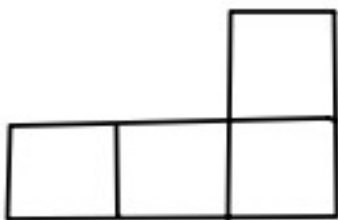
	18	20
	27	30
32	36	40
40	45	50

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What was your thinking? What strategies did you use to put the pieces on the towel?

Challenge:

Fill in this puzzle piece for a space on the towel that has not yet been filled.
Explain your thinking.



Review of Grade 3: Number and Operations Base Ten, Activity A

Cars per Hour

Directions: Read through the following problem and answer the questions. Use the space on the back of this page to complete your work. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

A new road opened in Montgomery County and the transportation department wanted to see how many people were using it, and what time of the day it was being used the most. A camera was set up to record the number of cars that used the road each hour from 6 AM through 6 PM. The chart shows the data:

Cars per Hour

HOUR	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 noon	1 PM	2 PM	3 PM	4 PM	5 PM
# of Cars	894	966	2,311	732	144	102	463	295	271	346	809	3,043

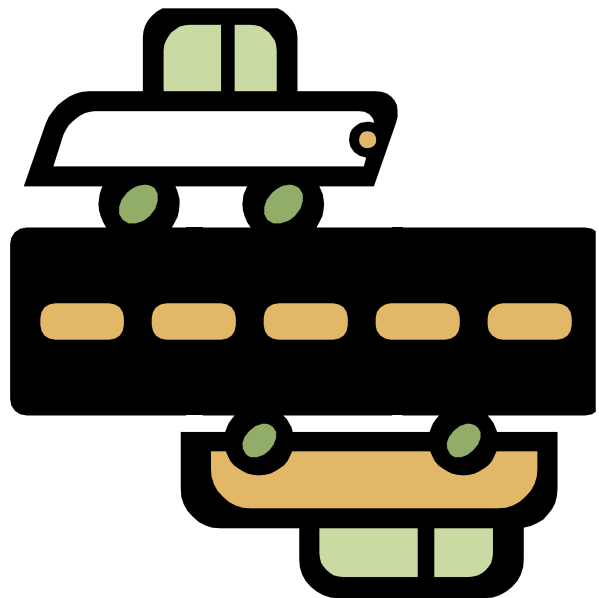
To explain the results quickly, it was decided that an estimation of the total number of cars for the day would be used. The transportation department could either round to the nearest 10 or the nearest 100.

A) Which method should they use and why do you think it is the better choice?

CHALLENGE:

There are two choices for rounding in this problem. Rounding to the nearest 100 or rounding to the nearest 10. One method is faster and one method is more accurate.

B) Explain which method is which and why.



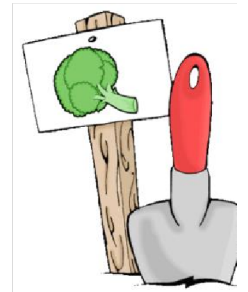
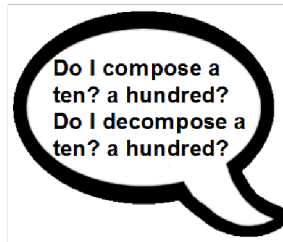
REMEMBER to show how you know your answers are correct.

Review of Grade 3: Number and Operations Base Ten, Activity B

Decompose or Compose



Solve the problems below. Ask yourself...



***Note to parents:

Curriculum 2.0 teaches students a variety of flexible strategies for solving addition and subtraction problems. We no longer use the words “carry or “borrow”. Instead, we use “compose and decompose”. Please note the **examples** given on the following pages. **Allow your child flexibility** in solving the problems. Have them share their thinking!

Sample Strategies

$\begin{array}{r} 762 \\ -303 \\ \hline 459 \end{array}$ <p><i>Compensate +1 so you must -1</i></p> $\begin{array}{r} 762 + 1 \rightarrow 763 \\ -303 \\ \hline 460 \\ -1 \\ \hline 459 \end{array}$	$272 + 128 = 400$ <p><i>200 + 100 = 300</i> <i>70 + 20 = 90</i> <i>2 + 8 = 10</i> $\begin{array}{r} 300 \\ +90 \\ +10 \\ \hline 400 \end{array}$</p>
$219 + 397 = 616$ <p><i>+3 → composing a ten</i></p> $\begin{array}{r} 219 + 400 = 619 \\ -3 \\ \hline 616 \end{array}$ <p><i>compensate</i></p>	$154 + 247 = 401$ <p><i>composing a ten</i></p> $\begin{array}{r} 154 + 3 \\ \hline 157 \\ +250 \\ \hline 407 \end{array}$ <p><i>157 + 250 = 407</i></p>
$762 - 303 = 459$ <p>$700 - 300 = 400$ $3 + 59 = 62$</p>	$400 - 174 = 226$ <p><i>Compensate</i></p> $\begin{array}{r} 399 \\ -174 \\ \hline 225 \\ +1 \\ \hline 226 \end{array}$
$154 + 247 = 401$ <p><i>Follow the arrows to see why we added</i></p>	

$$\begin{array}{r} 762 \\ -303 \\ \hline \end{array}$$

$$272 + 128 =$$

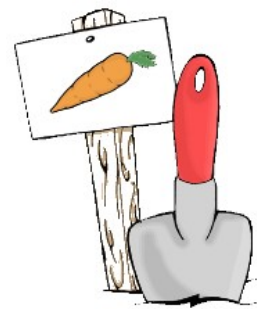
$$219 + 397 =$$

$$154 + 247 =$$

$$762 - 303 =$$

$$\begin{array}{r} 400 \\ -174 \\ \hline \end{array}$$

$$154 + 247 =$$



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Review of Grade 3: Number and Operations – Fractions, Activity A

Directions: Read through the following problem and answer the questions. Use the space on the back of this page to complete your work. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

"Whole in One Miniature Golf"

green triangle

black hexagon

red quadrilateral

yellow hexagon

blue quadrilateral

3

2

4

1

Cut out the green triangles.

"Whole" in One Miniature Golf


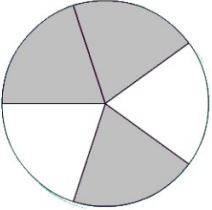

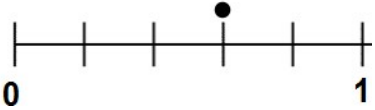
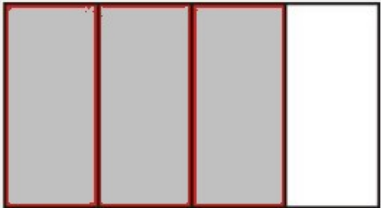
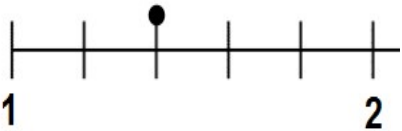
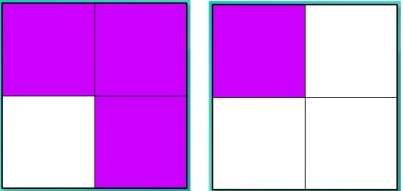
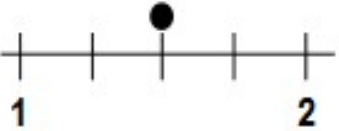
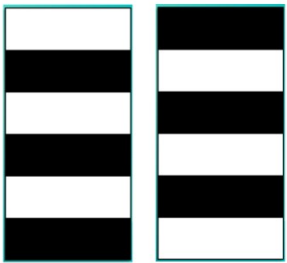
Play **Fraction Miniature Golf**. As you move to each "whole", identify the unit fraction that the green triangle represents.

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REMEMBER to show how you know your answers are correct for **“Whole” in One Golf**.

Review of Grade 3: Number and Operations – Fractions, Activity B Fraction Concentration

Cut out the cards. Turn them face down. Take turns with a partner turning over two cards at a time to make a match. If your cards don't show the same fraction, turn them over and lose your turn.

$\frac{5}{3}$			$\frac{3}{2}$
$\frac{7}{4}$	$\frac{4}{4}$		1
		$1\frac{3}{4}$	
		$\frac{7}{5}$	

Blank page

REMEMBER to show how you know your answers are correct.

REMEMBER to show how you know your answers are correct.

Preview Grade 3: Measurement and Data, Activity B

Vegetable Garden

Directions: Read through the following problem and answer the questions. Use the space on the back of this page to complete your work. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

A year ago Simone planted a vegetable garden with the dimensions of 2 feet by 15 feet.

This past summer she moved to a new home and her new yard had a different shape. So she made a new garden with the dimensions of 6 feet by 7 feet.

- A) Which of her gardens is larger?

CHALLENGE:

- B) If she wanted to make her new garden the same size as her old garden, but her new yard is only 14 feet by 14 feet, what other possibilities could she use? She wants all of her gardens to look like rectangles.



REMEMBER to show how you know your answers are correct.

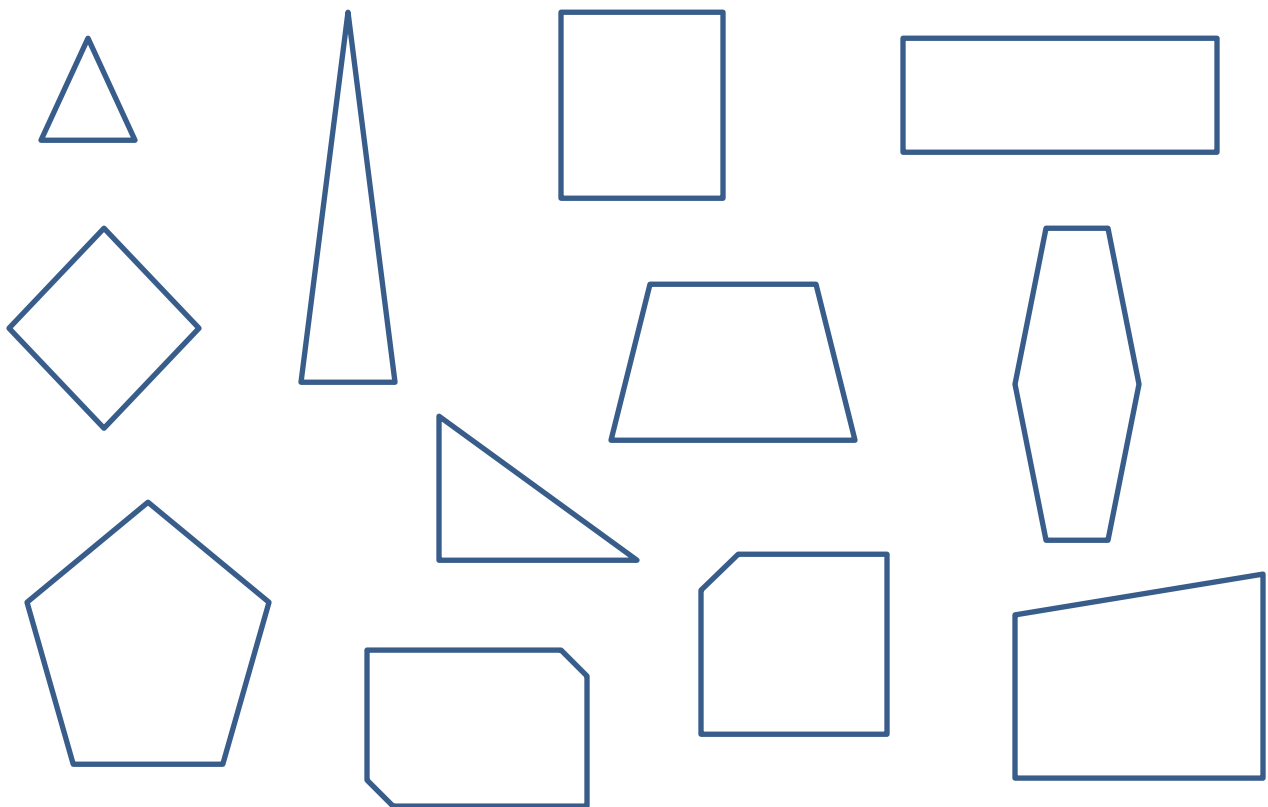
Review Grade 3: Geometry, Activity A

Categories

Directions: Read through the following problem and answer the questions. Use the space on the back of this page to complete your work. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

Look at the shapes below.

A) Choose two completely different ways to divide the shapes into two categories.



CHALLENGE:

Study the shapes carefully.

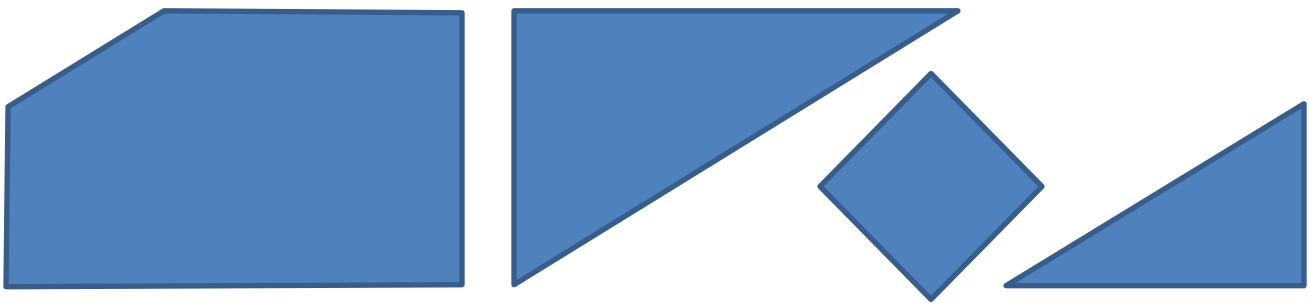
B) Describe the attribute that you think is true for the greatest number of the shapes. It may be true for all or just most of the shapes, but it should be something that the majority of shapes has in common.

REMEMBER to show how you know your answers are correct.

Preview Grade 3: Geometry, Activity B Quadrilaterals

Directions: Read through the following problem and answer the questions. Use the space on the back of this page to complete your work. You may work with a parent, older brother or sister, or friend, but you must show all of your ideas in words, pictures or symbols to completely answer the questions.

Trace the four shapes below and cut them out. Be as accurate as you can so that your answers will be easier to discover.



One of the shapes does not belong. There is only one way to figure out which shape it is. Three of the shapes can be rearranged to form both a square and a rectangle. These are the magic shapes. The fourth shape will be left over.

A) Explore ways to combine the shapes to discover the three magic shapes.

CHALLENGE:

B) Using just the three magic shapes, is it possible to create other kinds of quadrilaterals (four-sided) shapes, and if so, what would they look like?

REMEMBER to show how you know your answers are correct.

$$\begin{array}{r} 1 \\ \times 0 \\ \hline \end{array}$$

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$$\begin{array}{r} 1 \\ \times 1 \\ \hline \end{array}$$

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$$\begin{array}{r} 1 \\ \times 2 \\ \hline \end{array}$$

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$$\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$$

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$$\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 0 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$$

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$$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 0 \\ \hline \end{array}$$

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$$\begin{array}{r} 8 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$$

$2 \div 2 =$ $4 \div 2 =$ $6 \div 2 =$ $8 \div 2 =$

$10 \div 2 =$ $12 \div 2 =$ $14 \div 2 =$ $16 \div 2 =$

$18 \div 2 =$ $20 \div 2 =$ $3 \div 3 =$ $6 \div 3 =$

$9 \div 3 =$ $12 \div 3 =$ $15 \div 3 =$ $18 \div 3 =$

$$21 \div 3 = \quad 24 \div 3 = \quad 27 \div 3 = \quad 30 \div 3 =$$

$$4 \div 4 = \quad 8 \div 4 = \quad 12 \div 4 = \quad 16 \div 4 =$$

$$20 \div 4 = \quad 24 \div 4 = \quad 28 \div 4 = \quad 32 \div 4 =$$

$$36 \div 4 = \quad 40 \div 4 = \quad 5 \div 5 = \quad 10 \div 5 =$$

$$15 \div 5 = \quad 20 \div 5 = \quad 25 \div 5 = \quad 30 \div 5 =$$

$$35 \div 5 = \quad 40 \div 5 = \quad 45 \div 5 = \quad 50 \div 5 =$$

$$6 \div 6 = \quad 12 \div 6 = \quad 18 \div 6 = \quad 24 \div 6 =$$

$$30 \div 6 = \quad 36 \div 6 = \quad 42 \div 6 = \quad 48 \div 6 =$$

$$54 \div 6 = 60 \div 6 = 7 \div 7 = 14 \div 7 =$$

$$21 \div 7 = 28 \div 7 = 35 \div 7 = 42 \div 7 =$$

$$49 \div 7 = 56 \div 7 = 63 \div 7 = 70 \div 7 =$$

$$8 \div 8 = 16 \div 8 = 24 \div 8 = 32 \div 8 =$$

$40 \div 8 =$ $48 \div 8 =$ $56 \div 8 =$ $64 \div 8 =$

$72 \div 8 =$ $80 \div 8 =$ $9 \div 9 =$ $18 \div 9 =$

$27 \div 9 =$ $36 \div 9 =$ $45 \div 9 =$ $54 \div 9 =$

$63 \div 9 =$ $72 \div 9 =$ $81 \div 9 =$ $90 \div 9 =$