



Name:

Module: *Multiplication & Division of Whole Numbers (MDWN)*

Student Activity Sheets



The Meadows Center
FOR PREVENTING EDUCATIONAL RISK
THE UNIVERSITY OF TEXAS AT AUSTIN
COLLEGE OF EDUCATION

Mathematics Institute for Learning Disabilities and Difficulties

www.meadowscenter.org

©2012 University of Texas System/Texas Education Agency

These materials are copyrighted © by and are the property of the Texas Education Agency and the University of Texas System and may not be reproduced or distributed without their written permission, except by Texas public school educators under the following conditions:

1. Any portion reproduced or distributed is used exclusively for nonprofit educational purposes in Texas.
2. No monetary charge is made for the reproduced materials, any document containing them, or any activity at which they are distributed; however, a reasonable charge to cover only the cost of reproduction and distribution may be charged.
3. No modifications or changes are made to the materials by anyone without the express written permission of the University of Texas System and the Texas Education Agency.

To obtain a license to reprint large quantities, or to use the materials in a manner not specified above, contact copyrights@tea.state.tx.us

×	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Break Apart Strategy

$$6 \times 7$$

Step 1.) Break apart the factor. $\underline{\quad\quad} + \underline{\quad\quad} \times 7$

Step 2.) Multiply by the other factor. $\underline{\quad\quad} \times 7 + \underline{\quad\quad} \times 7$

Step 3.) Add the products. $\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$

Break Apart Strategy

$$6 \times 7$$

Step 1.) Break apart the factor. $6 \times \underline{\quad} + \underline{\quad}$

Step 2.) Multiply by the other factor. $6 \times \underline{\quad} + 6 \times \underline{\quad}$

Step 3.) Add the products. $\underline{\quad} + \underline{\quad} = \underline{\quad}$

Make 10 Subtract the Factor Strategy

$$9 \times 4$$

Step 1.) Think of 9 as 10 - 1.

$$9 \times 4 = \underline{\quad} + \underline{\quad}$$

Step 2.) Multiply the other factor by 10.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

Step 3.) Subtract the other factor.

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

Doubling Strategy for 4s

$$9 \times 4$$

Step 1.) Think of 4 as 2×2 .

$$9 \times \underline{\quad} \times \underline{\quad}$$

Step 2.) Double the factor.

$$\underline{\quad} \times 2 = \underline{\quad}$$

Step 3.) Double the product.

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

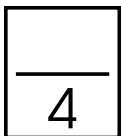
Josie	
Micah	

Use the game board above to answer the following questions.

- 1.) If Josie had factor cards 3, 4, and 9 in her hand, which product square should she cover with her counter? Why?

- 2.) Micah was trying to cover the product 54 with his counter. He had already drawn a factor of 6. What other cards does he need to draw to be able to cover 54?

- 3.) Josie drew the factor cards 5, 7, and 6. List the product numbers she could cover that are not already covered.



Tina and Alfredo are playing the same game Josie and Micah played.
Answer the questions about their game.

- 1.) Tina has factor cards 1, 3, and 8 in her hand. List 2 multiplication equations that she can create with these 3 cards.

- 2.) Alfredo has 2 factor cards that are the same number. List 3 possible products he could cover. (Example: He could cover 1 because he has 1×1 .)

- 3.) Tina covers product square 7 with her counter and says, “ 3×4 is 7.” Is she correct? Why or why not?

If not, what strategy do you suggest she uses to correct herself?

4.) Alfredo has factor cards 3 and 8. He put his counter on 24. Is he correct?

Use a strategy to show what he might have done to solve.

Multiply by Powers of 10.

Use a marker or highlighter for the Powers of 10.

1.) $60 \times 10 =$ _____

2.) $100 \times 7 =$ _____

3.) $60 \times 100 =$ _____

4.) $1,000 \times 7 =$ _____

5.) $60 \times 1,000 =$ _____

6.) There are 100 centimeters in every meter. How many centimeters are in 12 meters?

What is the question asking you to find?

Multiply by Powers of 10.

Use a marker or highlighter for the Powers of 10.

1.) $5 \times 1,000 =$ _____

2.) $100 \times 30 =$ _____

3.) $10 \times 80 =$ _____

4.) $20 \times 1,000 =$ _____

5.) $90 \times 10 =$ _____

6.) $15 \times 100 =$ _____

7.) $1,000 \times 40 =$ _____

8.) $100 \times 700 =$ _____

Choose the best answer.

9.) There are 100 centimeters in every meter. How many centimeters are in 12 meter?

A 300 grams

C 30 grams

B 3,000 grams

D 1,003 grams

10.) The city of Chicago is the third most populated city in the United States with approximately 3 million people. The United States population is 100 times more populous. About how many people live in the United States?

A 30 million

C 3,000 million

B 300 million

D 1 million

Solve the multiplication problem using two different strategies.

11.) $6 \times 4 =$ _____

12.) $6 \times 4 =$ _____

$$\begin{array}{rcl}
 4 & \times & 3 = \underline{\hspace{1cm}} \\
 \text{Think } \swarrow & 40 & \times 30 \quad \searrow \text{Think} \\
 \underline{\hspace{1cm}} & \times & \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \\
 & \swarrow & \searrow \\
 & \underline{\hspace{1cm}} & \times \underline{\hspace{1cm}} \times 10 \times 10 \\
 & & \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \\
 & & 40 \times 30 = \underline{\hspace{2cm}}
 \end{array}$$

$$\begin{array}{rcl}
 4 & \times & 5 = \underline{\hspace{1cm}} \\
 \text{Think } \swarrow & 40 & \times 50 \quad \searrow \text{Think} \\
 \underline{\hspace{1cm}} & \times & \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \\
 & \swarrow & \searrow \\
 & \underline{\hspace{1cm}} & \times \underline{\hspace{1cm}} \times 10 \times 10 \\
 & & \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \\
 & & 40 \times 50 = \underline{\hspace{2cm}}
 \end{array}$$

Use a strategy to solve.

- 1.) Mrs. Hern has 30 fourth grade math students. She bought each student a pencil-top eraser, 2 folders, and 5 colored pens. Each eraser costs \$0.20. How much did she spend on 30 erasers?

Solve the multiplication problem.

2.) $2 \times 7 = \underline{\quad}$

Think 20×70 Think

$\underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$

$\underline{\quad} \times \underline{\quad} \times 10 \times 10$

$\underline{\quad} \times \underline{\quad}$

$20 \times 70 = \underline{\quad}$

3.) $9 \times 6 = \underline{\quad}$

Think 90×60 Think

$\underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$

$\underline{\quad} \times \underline{\quad} \times 10 \times 10$

$\underline{\quad} \times \underline{\quad}$

$90 \times 60 = \underline{\quad}$

4.) $8 \times 3 = \underline{\quad}$

Think 80×30 Think

$\underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$

$\underline{\quad} \times \underline{\quad} \times 10 \times 10$

$\underline{\quad} \times \underline{\quad}$

$80 \times 30 = \underline{\quad}$

1.) Jordan Elementary went on a fourth grade field trip. There were 20 chaperones on the trip. Each chaperone was in charge of 10 students. How many students went on the fourth grade field trip?

A 200 students

C 2,000 students

B 20,000 students

D 130 students

Use a strategy to solve.

2.) $8 \times 7 = \underline{\hspace{2cm}}$

Solve the multiplication problem.

3.) $3 \times 6 = \underline{\hspace{2cm}}$

Think 30×60 Think

$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times 10 \times 10$

$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$

$80 \times 30 = \underline{\hspace{2cm}}$

Solve the multiplication problem.

4.) $3 \times 6 = \underline{\quad}$

Think 30×60 Think

$\underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$

$\underline{\quad} \times \underline{\quad} \times 10 \times 10$

$\underline{\quad} \times \underline{\quad}$

$30 \times 60 = \underline{\quad}$

5.) $4 \times 9 = \underline{\quad}$

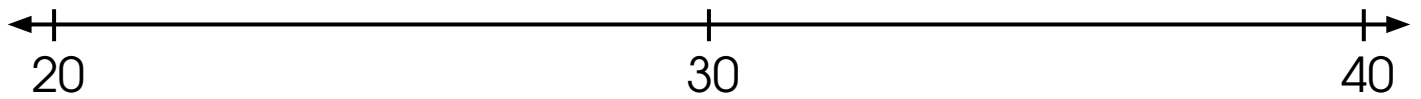
Think 40×90 Think

$\underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$

$\underline{\quad} \times \underline{\quad} \times 10 \times 10$

$\underline{\quad} \times \underline{\quad}$

$40 \times 90 = \underline{\quad}$



$$\begin{array}{rcc}
 37 & \times & 28 \\
 \downarrow & & \downarrow \\
 \text{Think } \left(\underline{\quad} \times \underline{\quad} = \underline{\quad} \right) & & \text{Think} \\
 \underline{\quad} \times \underline{\quad} & \times & \underline{\quad} \times \underline{\quad} \\
 \underline{\quad} \times \underline{\quad} & = & \underline{\quad}
 \end{array}$$

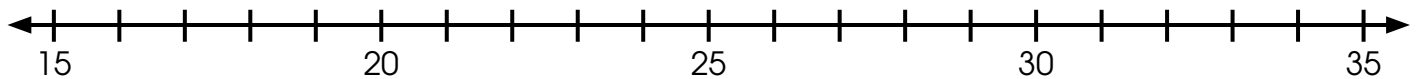
Compatible numbers as a tool to estimate.

$$\begin{array}{rcc}
 52 & \times & 68 \\
 \downarrow & & \downarrow \\
 \text{Think } \left(\underline{\quad} \times \underline{\quad} = \underline{\quad} \right) & & \text{Think} \\
 \underline{\quad} \times \underline{\quad} & \times & \underline{\quad} \times \underline{\quad} \\
 \underline{\quad} \times \underline{\quad} & = & \underline{\quad}
 \end{array}$$

- 1.) The whole school went on a trip to the aquarium. There were 17 buses, about 42 students, and 3 teachers on each bus. Estimate how many students went on the trip to the aquarium.

Find an estimated answer for the multiplication problems below. Then, use a calculator to find the exact answer. Circle "Yes" or "No" if your estimation is reasonable.

2.)



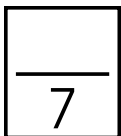
$$\begin{array}{r}
 18 \times 26 \\
 \downarrow \quad \downarrow \\
 \underline{\quad} \times \underline{\quad} = \underline{\quad} \\
 18 \times 26 = \underline{\quad}
 \end{array}$$

Reasonable? Yes No

3.) 61×94

$$\begin{array}{r}
 61 \times 94 \\
 \downarrow \quad \downarrow \\
 \underline{\quad} \times \underline{\quad} = \underline{\quad} \\
 61 \times 94 = \underline{\quad}
 \end{array}$$

Reasonable? Yes No



Solve using a strategy.

1.) $4 \times 8 = \underline{\hspace{2cm}}$

2.) $40 \times 70 = \underline{\hspace{2cm}}$

Use rounding or compatible numbers to estimate each product.

3.) 49×51
 ↓ ↓
____ $\times$ ____ = ____

4.) 72×94
 ↓ ↓
____ $\times$ ____ = ____

5.) 24×42
 ↓ ↓
____ $\times$ ____ = ____

6.) 15×18
 ↓ ↓
____ $\times$ ____ = ____

7.) Yaneth baked 36 cookies for each homeroom class at Bluebonnet Elementary School. Bluebonnet Elementary School has 9 homerooms. About how many cookies did Yaneth bake?

- A $45 \times 10 = 450$ cookies
- B $30 \times 10 = 300$ cookies
- C $40 \times 20 = 800$ cookies
- D $36 \times 10 = 360$ cookies

$$3 \times 15$$

[illegible]

A 4x20 grid of triangles. Each row contains 20 identical triangles, and there are 4 rows. The triangles are arranged in a regular grid pattern.

Solve using the partial-products method.

- 1.) The grocery store has a peanut butter display. The display is organized in 6 rows with 15 jars of peanut butter on each row. How many total jars of peanut butter are on display?

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

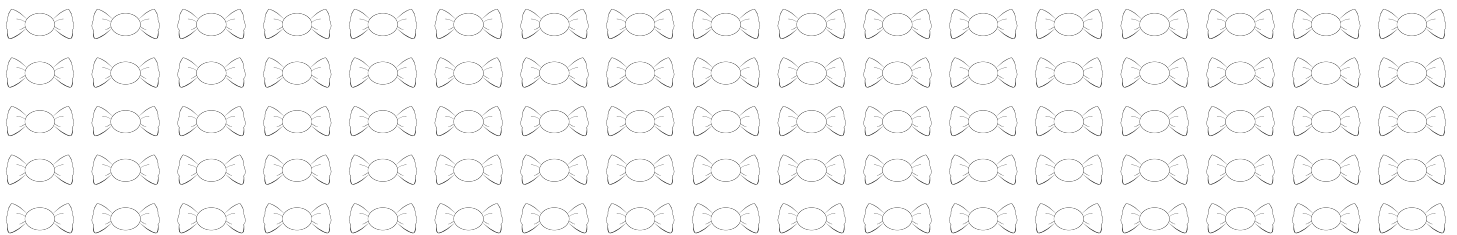
$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$6 \times 15 = \underline{\quad}$$

2.)

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$



$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$5 \times 17 = \underline{\quad}$$

3.)

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

X
X
X
X X

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$23 \times 4 = \underline{\quad}$$

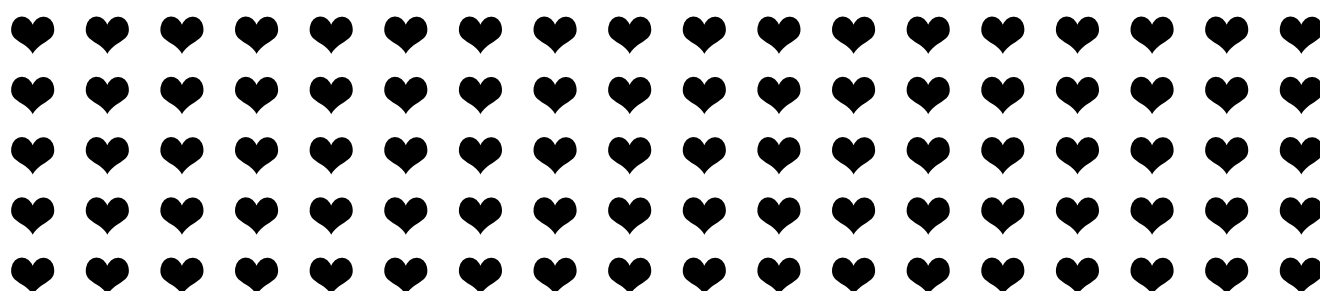
Student "A," solve for the tens.

Student "B," solve for the ones.

Work together to find the sum.

Then, switch roles.

1.) $18 \times 5 = \underline{\hspace{2cm}}$



"A"

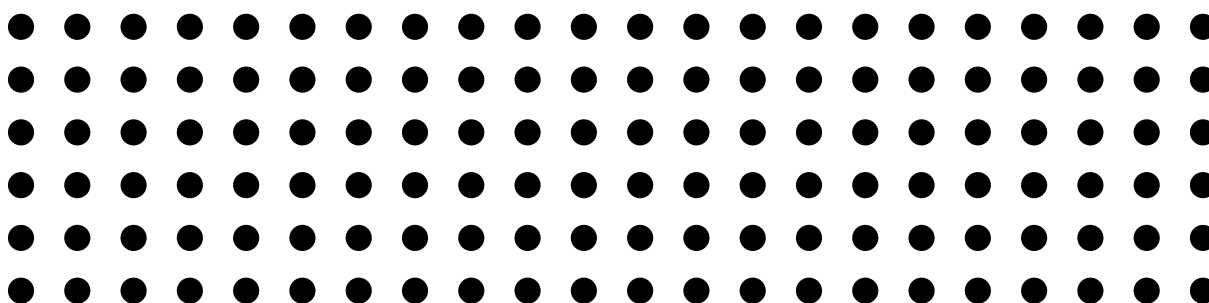
"B"

$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

2.) $22 \times 6 = \underline{\hspace{2cm}}$



"A"

"B"

$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Use rounding or compatible numbers to estimate each product.

1.) 32×61



_____ × _____ = _____

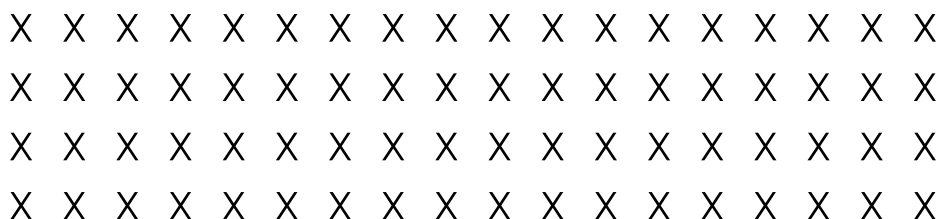
2.) 79×11



_____ × _____ = _____

Use the partial-products method to solve.

3.) $18 \times 4 =$ _____

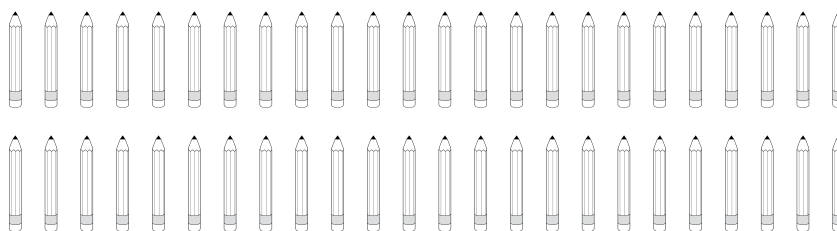


_____ × _____ = _____

_____ × _____ = _____

_____ + _____ = _____

4.) _____ × _____ = _____



_____ × _____ = _____

_____ × _____ = _____

_____ + _____ = _____

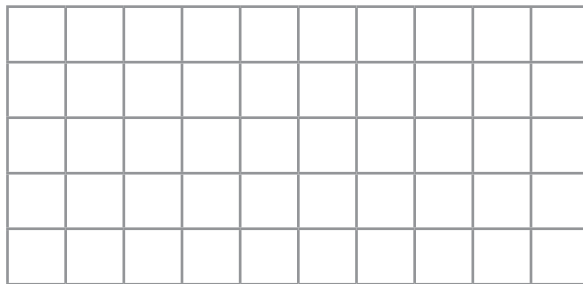
Choose the correct answer.

5.) Sammy has a collection of wizard stickers. He has 9 full pages of stickers. Each page has 52 stickers on it. How should Sammy split the factor 52 to find the partial products in order to find the total number of stickers?

- A** 50×2 and 50×9
- B** 52×10 and 52×9
- C** 50×9 and 2×9
- D** 9×10 and 9×2

Draw an array for 4×7 .

Draw an area model for 4×7 .



$$4 \times \underline{\quad} + \underline{\quad}$$

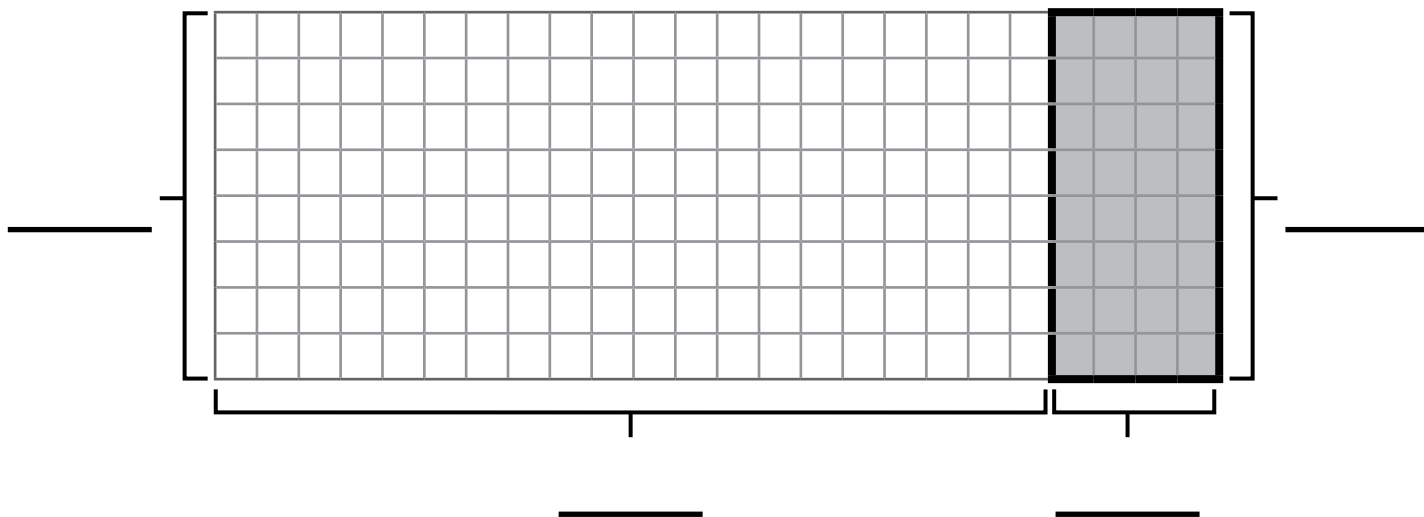
$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$4 \times 7 = \underline{\quad}$$

$$24 \times 8$$



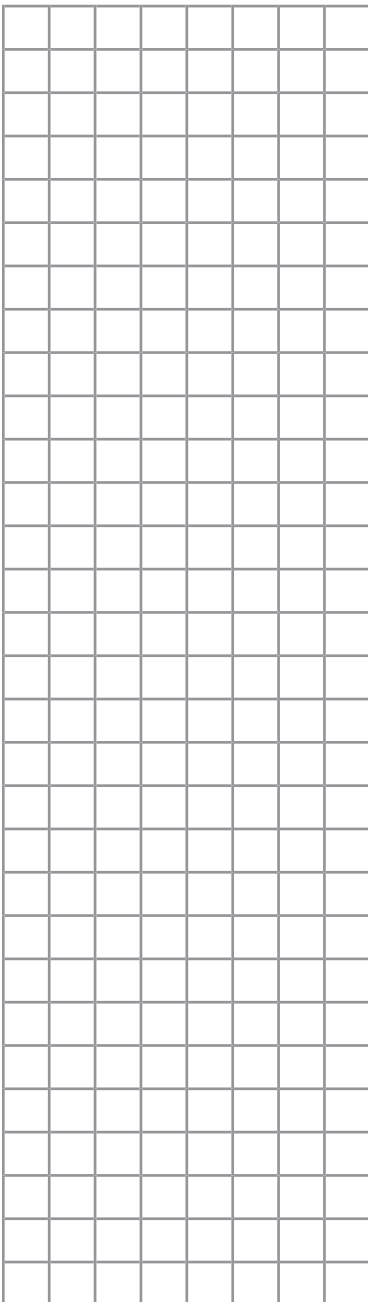
Estimate:

$$\begin{array}{ccc} 24 & \times & 8 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{ccccccc} & & 24 & \times & 8 & & \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} & & \underline{\quad} \times \underline{\quad} = \underline{\quad} & & & & \\ & & \underline{\quad} + \underline{\quad} = \underline{\quad} & & & & \\ & & 24 & \times & 8 & = & \underline{\quad} \end{array}$$

The ladies' quilting club made a quilt for the auction that sold for \$300. The quilt was 27 squares long and 6 squares wide. How many squares were on the quilt altogether?



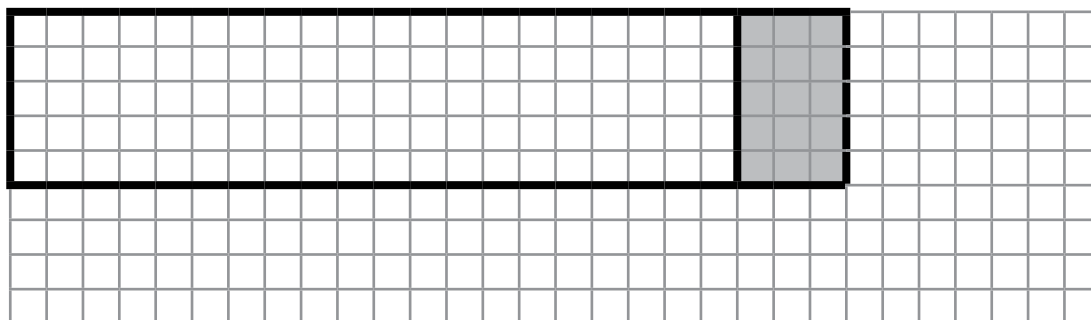
Estimate:

$$\begin{array}{ccc} 27 & \times & 6 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{ccc} 27 & \times & 6 \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ 24 & \times & 8 = \underline{\quad} \end{array}$$

1.) Estimate the area and then solve using the partial-product method.



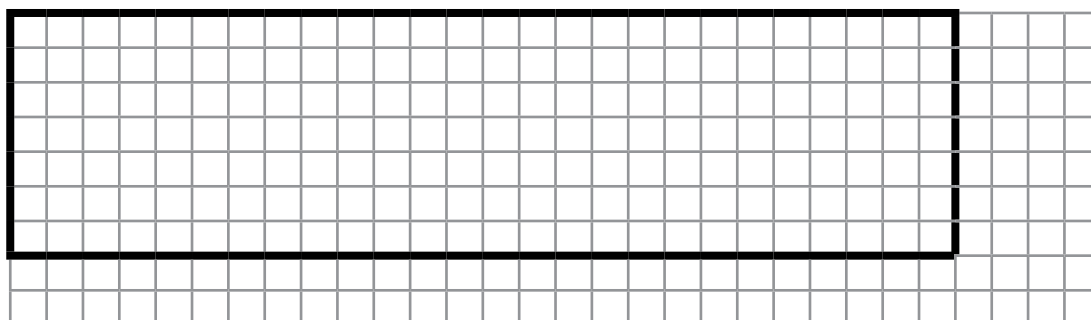
Estimate:

$$\begin{array}{r} 23 \times 5 \\ \downarrow \quad \downarrow \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{r} 23 \times 5 \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ 26 \times 7 = \underline{\quad} \end{array}$$

2.) Draw a line to break apart the rectangle.



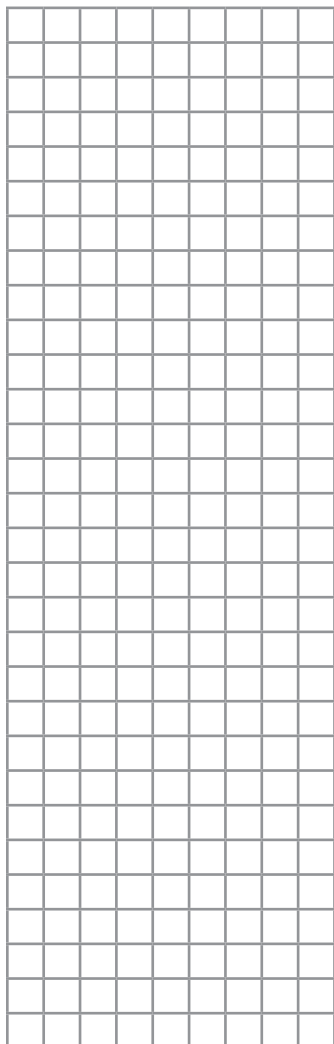
Estimate:

$$\begin{array}{r} 26 \times 7 \\ \downarrow \quad \downarrow \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{r} 26 \times 7 \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ 26 \times 7 = \underline{\quad} \end{array}$$

- 3.) Draw the area model for the given problem. Draw a line to show the partial products and then label the new rectangles.



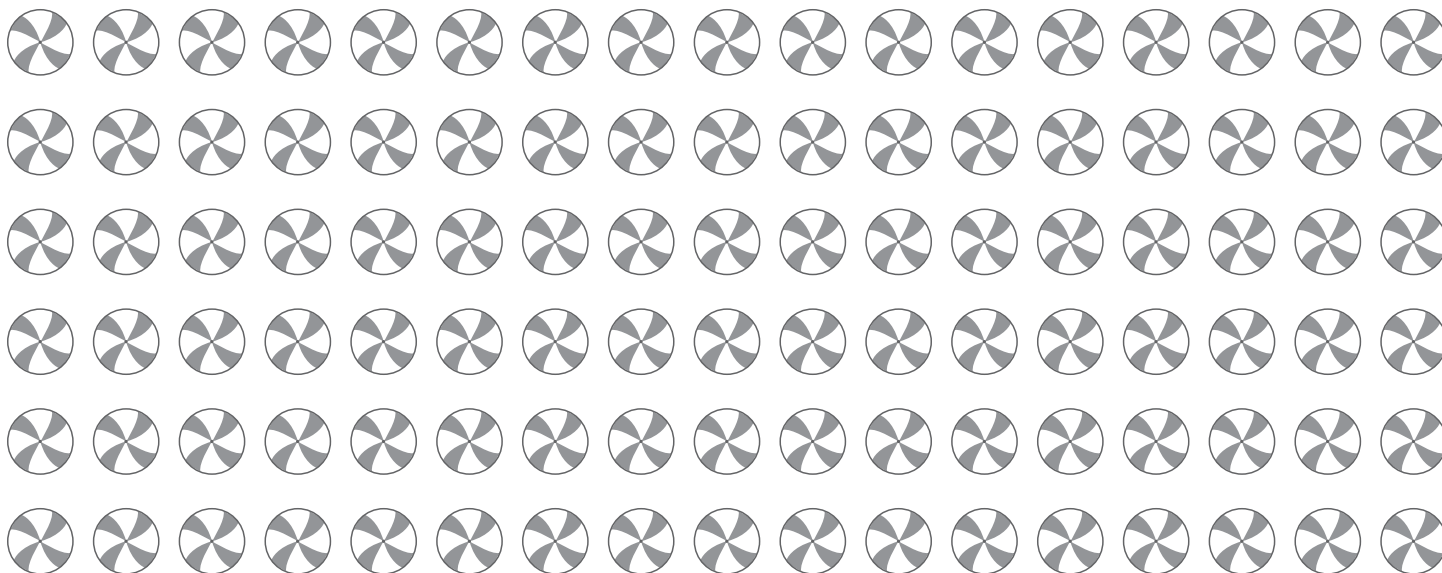
Estimate:

$$\begin{array}{ccc} 25 & \times & 9 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{ccccccc} & & 25 & \times & 9 & & \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} & \underline{\quad} \times \underline{\quad} = \underline{\quad} & & & & & \\ & \underline{\quad} + \underline{\quad} = \underline{\quad} & & & & & \\ & 25 \times 9 = \underline{\quad} & & & & & \end{array}$$

1.) $17 \times 6 =$ _____



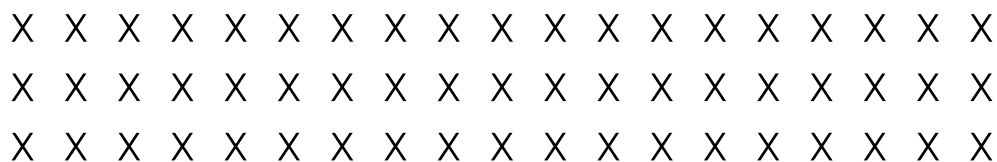
_____ $\times$ _____ = _____

_____ $\times$ _____ = _____

_____ $\times$ _____ = _____

$17 \times 6 =$ _____

2.) $3 \times 19 =$ _____



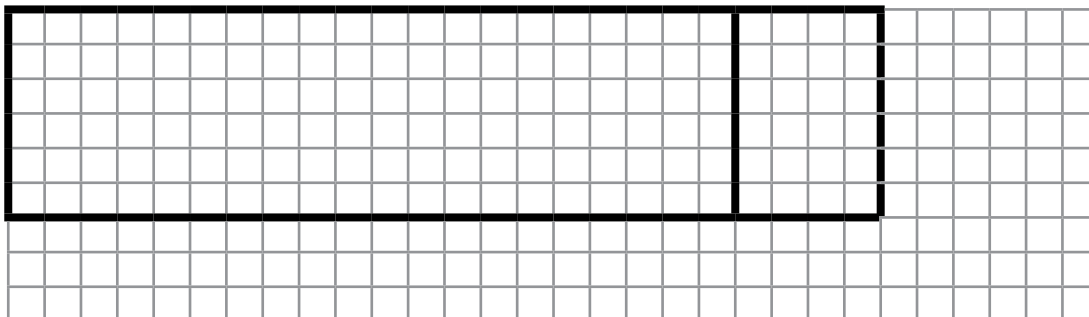
_____ $\times$ _____ = _____

_____ $\times$ _____ = _____

_____ $\times$ _____ = _____

$3 \times 19 =$ _____

3.) Estimate the area. Use the partial-products method to solve.



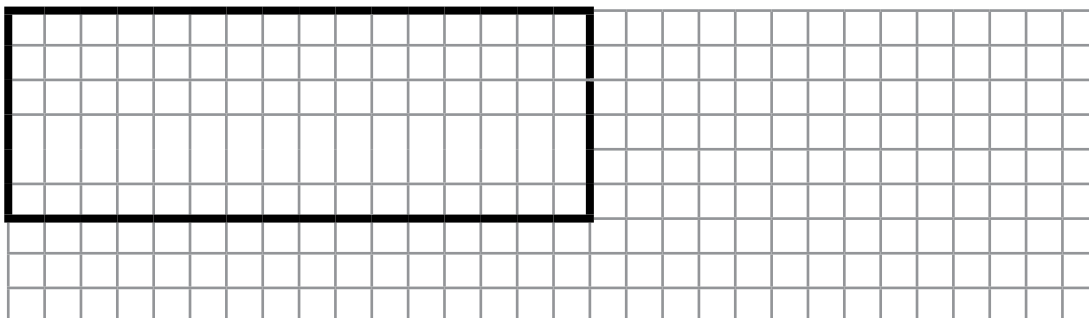
Estimate:

$$\begin{array}{ccc} 24 & \times & 6 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{rcl} 24 & \times & 6 \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} & \underline{\quad} \times \underline{\quad} = \underline{\quad} & \\ \underline{\quad} + \underline{\quad} = \underline{\quad} & & \\ 24 & \times & 6 = \underline{\quad} \end{array}$$

4.) Draw a line to show the partial products. Label the new rectangles.



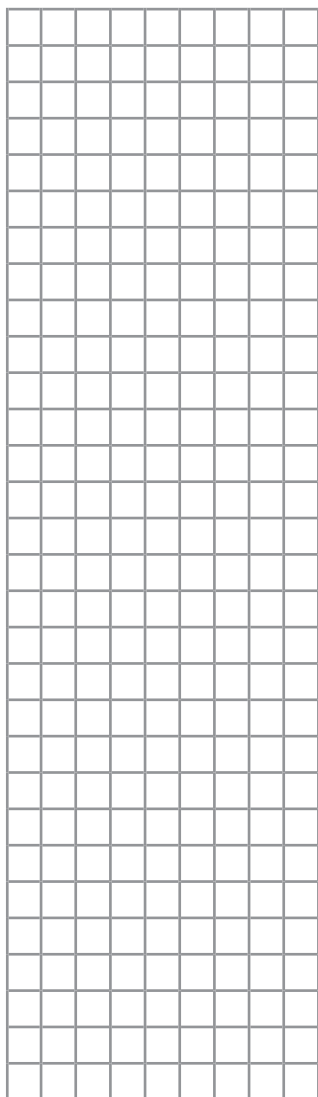
Estimate:

$$\begin{array}{ccc} 16 & \times & 6 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method:

$$\begin{array}{rcl} 16 & \times & 6 \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} & \underline{\quad} \times \underline{\quad} = \underline{\quad} & \\ \underline{\quad} + \underline{\quad} = \underline{\quad} & & \\ 16 & \times & 6 = \underline{\quad} \end{array}$$

5.) Draw an area model and then break apart to solve.



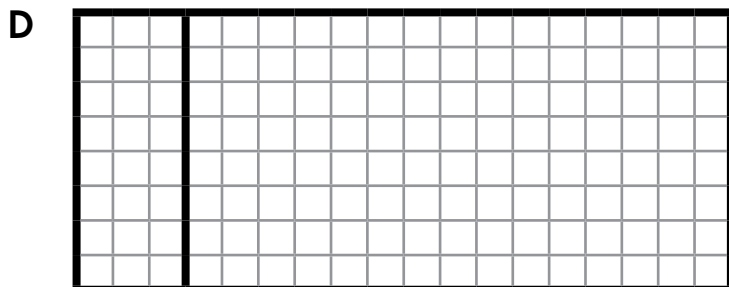
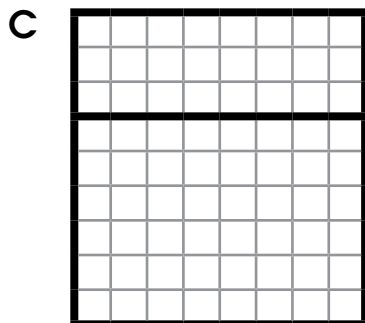
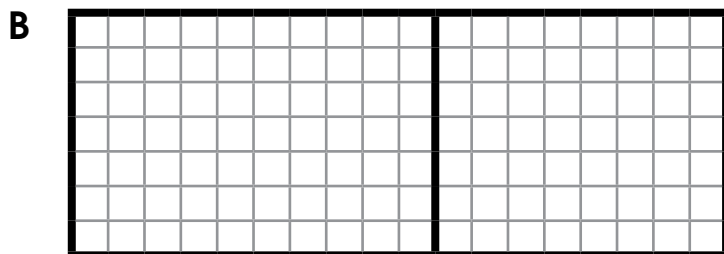
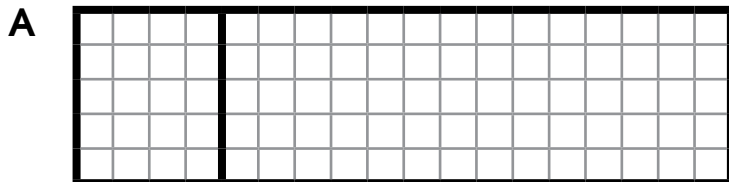
Estimate:

$$\begin{array}{ccc} 18 & \times & 9 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

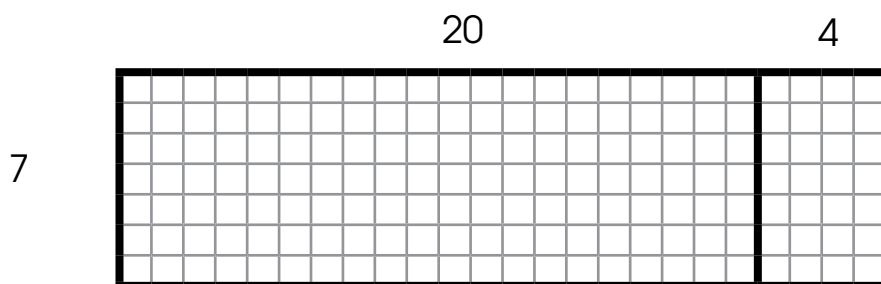
Partial-Products Method:

$$\begin{array}{ccccccc} & & 18 & \times & 9 & & \\ \underline{\quad} & \times & \underline{\quad} & = & \underline{\quad} & \underline{\quad} & \times & \underline{\quad} & = & \underline{\quad} \\ & & \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} \\ & & 18 & \times & 9 & = & \underline{\quad} \end{array}$$

- 6.) For her birthday party, Phuyinh wants to give a set of stickers to her friends as party favors. Each set contains 18 stickers. If she has 7 friends coming, how many stickers will she need? Choose the correct area model that represents the partial products method to solve.



$$24 \times 7$$



$$20 \times 7 = 1,400$$

$$4 \times 7 = 28$$

$$1,400 + 28 = 1,428$$

$$\begin{array}{r} 24 \times 7 \\ \downarrow \quad \downarrow \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$

Partial-Products Method

Step 1.) Estimate an answer.

$$\begin{array}{ccc} 39 & \times & 4 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Step 2.) Break apart a factor into tens and ones.

$$(\underline{\quad} + \underline{\quad}) \times 4$$

Step 3.) Multiply by the other factor.

$$\begin{array}{ccc} \underline{\quad} \times 4 & = & \underline{\quad} \\ \underline{\quad} \times 4 & = & \underline{\quad} \end{array}$$

Step 4.) Add the partial products.

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$39 \times 4 = \underline{\quad}$$

Jaime practiced his math facts every day for 8 days. He solved 24 facts each day. How many math facts did he solve in 8 days?

Jaime's work:

$$\begin{array}{r} 24 \\ \times 8 \\ \hline 32 \\ + 16 \\ \hline 48 \end{array}$$

Partial-Products Method

Step 1.) Estimate an answer.

Step 2.) Break apart a factor into tens and ones.

Step 3.) Multiply by the other factor.

Step 4.) Add the partial products to find the total.

Solve using the partial-products method.

1.) 56×3

$\downarrow \qquad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$
 $(\underline{\quad} + \underline{\quad}) \times 3$
 $\underline{\quad} \times 3 = \underline{\quad} \quad \underline{\quad} \times 3 = \underline{\quad}$
 $\underline{\quad} + \underline{\quad} = \underline{\quad}$
 $56 \times 3 = \underline{\quad}$

2.) 23×5

$\downarrow \qquad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$
 $(\underline{\quad} + \underline{\quad}) \times 5$
 $\underline{\quad} \times 5 = \underline{\quad} \quad \underline{\quad} \times 5 = \underline{\quad}$
 $\underline{\quad} + \underline{\quad} = \underline{\quad}$
 $23 \times 5 = \underline{\quad}$

3.)
$$\begin{array}{r} 28 \\ \times 7 \\ \hline \end{array}$$
 $\rightarrow$
$$\begin{array}{r} \underline{\quad} \\ \times \underline{\quad} \\ \hline \end{array}$$

$$\begin{array}{r} \underline{\quad} \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} \underline{\quad} \\ \times 7 \\ \hline \end{array}$$

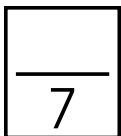
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

4.)
$$\begin{array}{r} 51 \\ \times 9 \\ \hline \end{array}$$
 $\rightarrow$
$$\begin{array}{r} \underline{\quad} \\ \times \underline{\quad} \\ \hline \end{array}$$

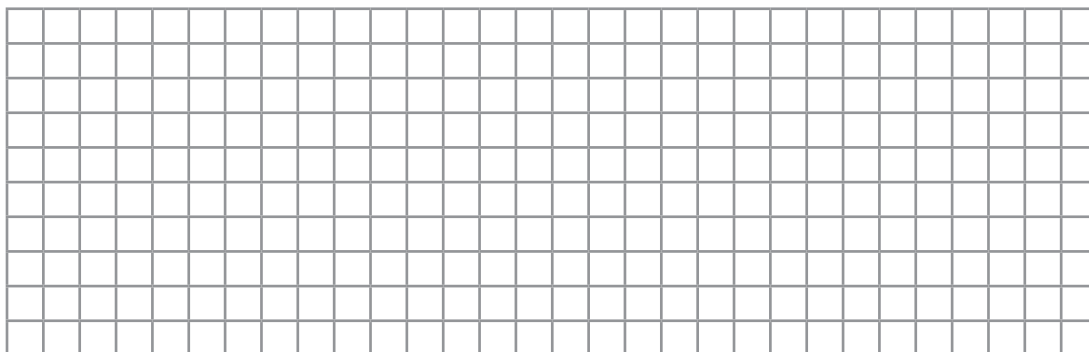
$$\begin{array}{r} \underline{\quad} \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} \underline{\quad} \\ \times 9 \\ \hline \end{array}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



1.) Draw a 23×8 area model on the grid below.



2.) Break apart the area model into tens and ones. Label the new rectangles with the correct multiplication sentence.

Estimate the answer.

3.) 48×6

↓ ↓

_____ $\times$ _____ = _____

Solve using the partial-products method.

4.) 84×5

→ → → →

_____ $\times$ 5 _____ $\times$ 5 _____ $\times$ 5 _____ $\times$ 5

_____ + _____ = _____

Solve using the partial-products method.

5.) 34×4

↓ ↓

_____ $\times$ _____ = _____

(_____ + _____) $\times$ 4

_____ $\times$ 4 = _____ _____ $\times$ 4 = _____

_____ + _____ = _____

34 $\times$ 4 = _____

6.) 19×8

↓ ↓

_____ $\times$ _____ = _____

(_____ + _____) $\times$ 8

_____ $\times$ 8 = _____ _____ $\times$ 8 = _____

_____ + _____ = _____

19 $\times$ 8 = _____

Choose the correct answer.

7.) Maria's school was selling rolls of wrapping paper for a school fundraiser. Her goal was to sell 150 rolls over the 3-day weekend. She sold 48 rolls each day. Did Maria meet her goal?

- A $48 \times 3 = 144$
- B $40 \times 3 = 120$
- C $8 \times 3 = 24$
- D $120 \times 24 = 144$

$$\begin{array}{ccc} 25 & \times & 7 \\ \downarrow & & \downarrow \end{array}$$

Estimate:

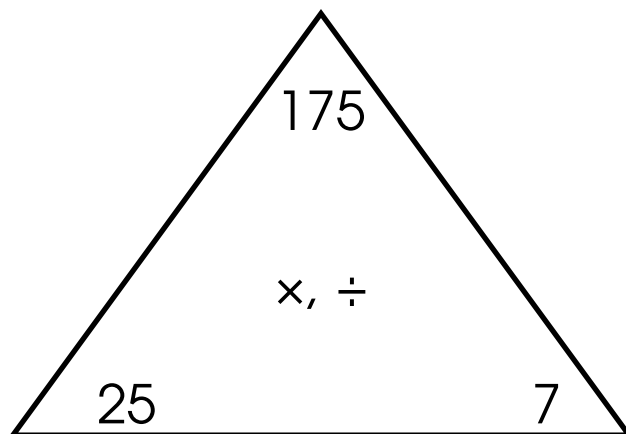
$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$(\underline{\hspace{2cm}} + \underline{\hspace{2cm}}) \times 7$$

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \quad \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$25 \times 7 = \underline{\hspace{2cm}}$$



$$25 \times 7 = 175$$

$$7 \times 25 = 175$$

$$175 \div 7 = \underline{\quad}$$

Mr. Perez gave his 36 students 2 facts. It was the students' job to decide if the facts were corresponding or not and then write out the rest of the corresponding facts for the number family.

The first group of students were given the facts $45 \times 9 = 405$ and $405 \div 15 = 27$. This group said the facts were corresponding because both facts had 405 as 1 of the numbers. The additional corresponding facts they wrote were $9 \times 45 = 405$ and $405 \div 27 = 15$.

Are the students correct?

Match the corresponding facts.

1.) $28 \times 8 = 224$

$56 \times 4 = 224$

2.) $336 \div 6 = 56$

$4 \times 7 = 28$

3.) $28 \div 4 = 7$

$56 \times 6 = 336$

4.) $224 \div 56 = 4$

$8 \times 28 = 224$

Partial-Products Method

Step 1.) Estimate an answer.

Step 2.) Break apart a factor into tens and ones.

Step 3.) Multiply by the other factor.

Step 4.) Add the partial products to find the total.

Estimate and use the partial-products method to solve.

5.) $16 \times 4 = \underline{\hspace{2cm}}$

6.) $4 \times 16 = \underline{\hspace{2cm}}$

Write the two related division sentences for the multiplication problems above.

7.) $\underline{\hspace{4cm}}$

8.) $\underline{\hspace{4cm}}$

From the division sentence, write the two related multiplication sentences.

$$216 \div 8 = 27$$

9.) _____

10.) _____

Partial-Products Method

Step 1.) Estimate an answer.

Step 2.) Break apart a factor into tens and ones.

Step 3.) Multiply by the other factor.

Step 4.) Add the partial products to find the total.

Estimate and use the partial-products method to solve.

1.)
$$\begin{array}{r} 32 \\ \times 8 \\ \hline \end{array}$$

2.)
$$\begin{array}{r} 8 \\ \times 32 \\ \hline \end{array}$$

3.)
$$\begin{array}{ccc} 72 & \times & 4 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \\ (\underline{\quad} + \underline{\quad}) & \times & 4 \\ \underline{\quad} \times 4 = \underline{\quad} & \underline{\quad} \times 4 = \underline{\quad} \\ & \underline{\quad} + \underline{\quad} = \underline{\quad} \\ & 72 \times 4 = \underline{\quad} \end{array}$$

Write the two related division facts for the multiplication facts above.

4.) _____

5.) _____

List the two multiplication facts and the two division facts for 5, 27, and 135.

6.) _____

7.) _____

8.) _____

9.) _____

10.) Victor has 4 boxes of sour candy. Each box has 36 candies in it. How many candies does Victor have altogether in his 4 boxes?

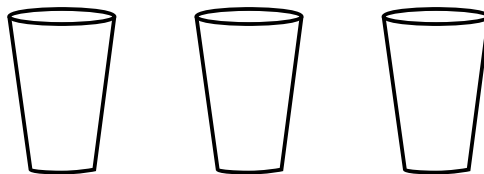
A 4×36
 $(4 \times 30) + (4 \times 6)$
 $120 + 24$
 144 candies

C 4×42
 $(4 \times 40) + (4 \times 2)$
 $160 + 8$
 168 candies

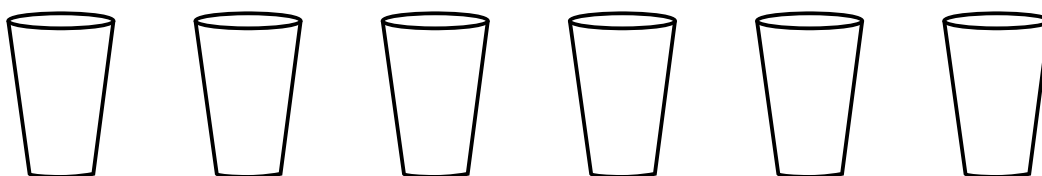
B $4 + 36$
 40 candies

D $36 \div 4$
 9 candies

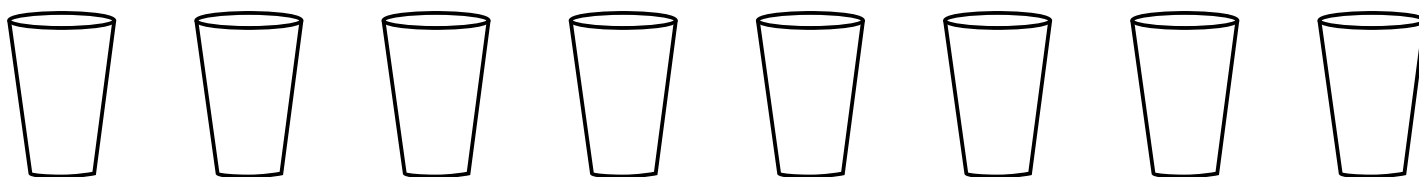
Lauren was asked to fill 3 cups with ice cubes at the lemonade stand. She counted 18 ice cubes in her bucket. If Lauren places the same number of cubes in each cup, how many ice cubes will be in each cup?



_____	÷	_____	=	_____	_____
Total		Cups		Equal Share	Left Over



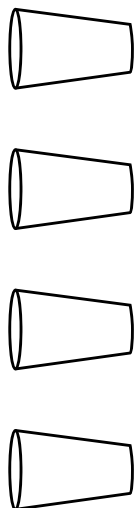
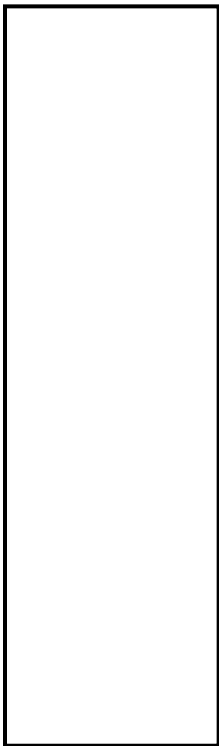
_____	÷	_____	=	_____	_____
Total		Cups		Equal Share	Left Over



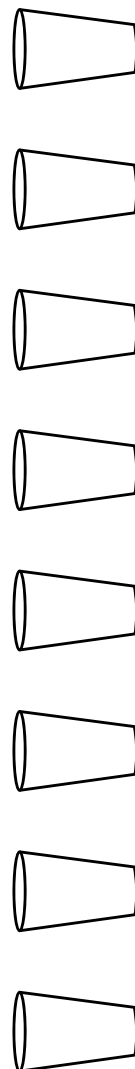
_____	÷	_____	=	_____	_____
Total		Cups		Equal Share	Left Over

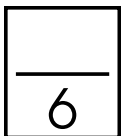
Use 20 base-10 ones to solve.

$$\begin{array}{r} \text{1.) } 20 \\ \text{Total} \end{array} \div \begin{array}{r} \text{Cups} \\ \hline \end{array} = \begin{array}{r} \text{Equal} \\ \text{Share} \\ \hline \end{array} \begin{array}{r} \text{Left} \\ \text{Over} \\ \hline \end{array}$$



$$\begin{array}{r} \text{2.) } 20 \\ \text{Total} \end{array} \div \begin{array}{r} \text{Cups} \\ \hline \end{array} = \begin{array}{r} \text{Equal} \\ \text{Share} \\ \hline \end{array} \begin{array}{r} \text{Left} \\ \text{Over} \\ \hline \end{array}$$





Step 1.) Estimate an answer.

Step 2.) Break apart a factor into tens and ones.

Step 3.) Multiply by the other factor.

Step 4.) Add the partial products to find the total.

Estimate and solve using the partial-products method.

1.)
$$\begin{array}{r} 37 \\ \times 4 \\ \hline \end{array}$$

Write the related division sentence for the multiplication problem above.

2.) _____

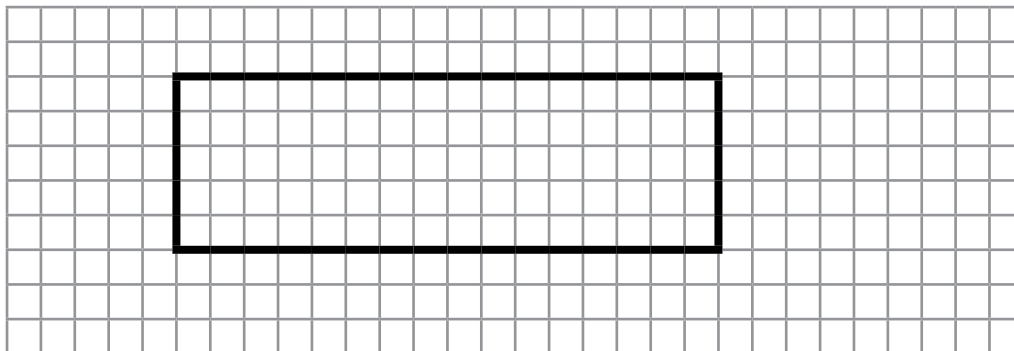
Estimate an answer.

3.) 68×7

_____ $\times$ _____ = _____

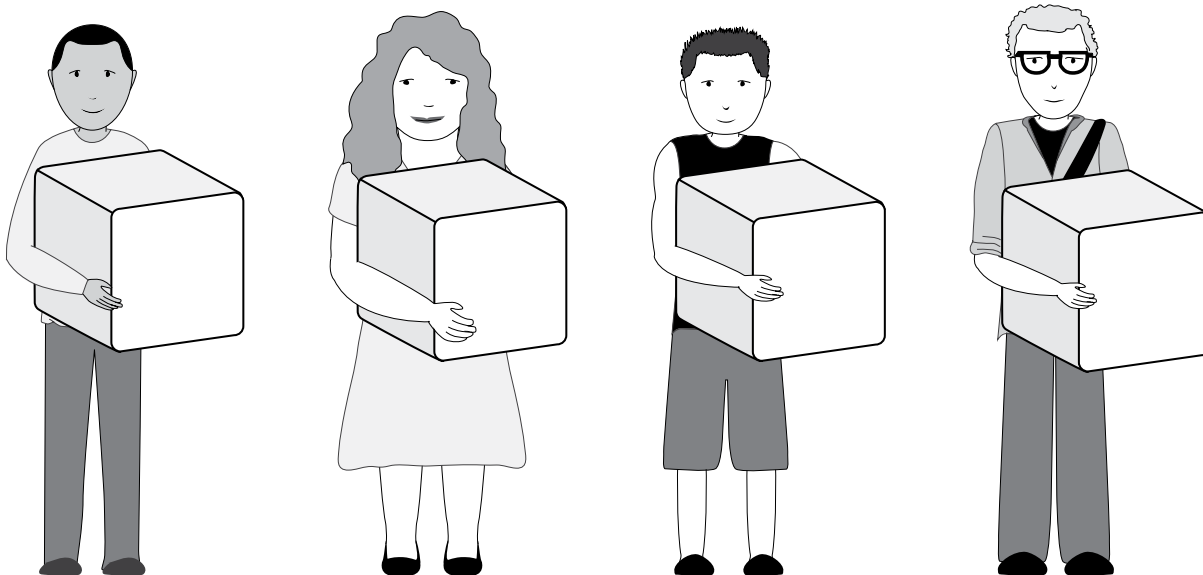
Draw a line to show the partial products. Label the new rectangles.

4.) 16×5

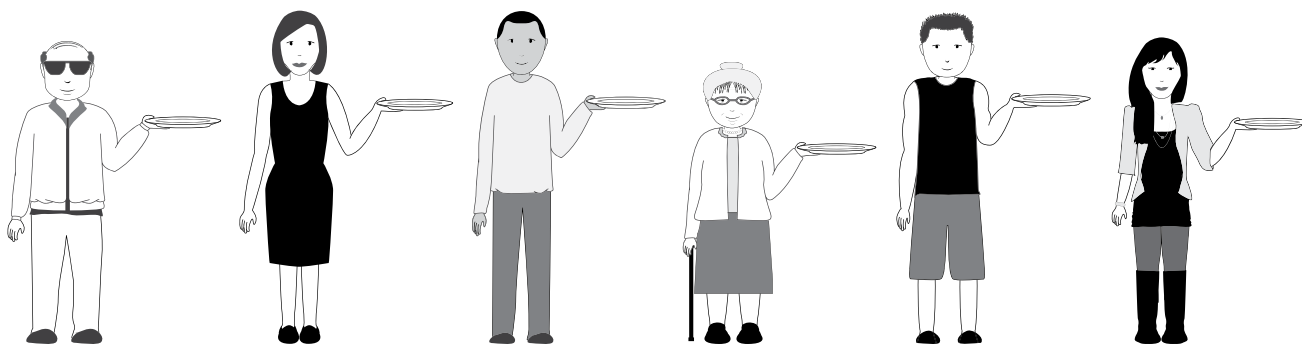


Use base-10 ones to solve.

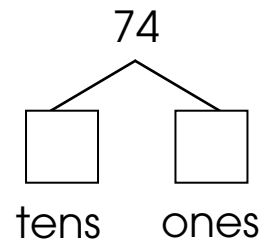
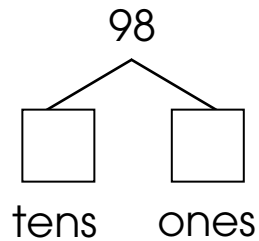
5.) $19 \div \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 Total People Equal Left
 Share Over



6.) $19 \div \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$



Decompose or break apart the numbers into tens and ones.



$$56 = \underline{\hspace{2cm}} \text{ tens } \underline{\hspace{2cm}} \text{ ones}$$

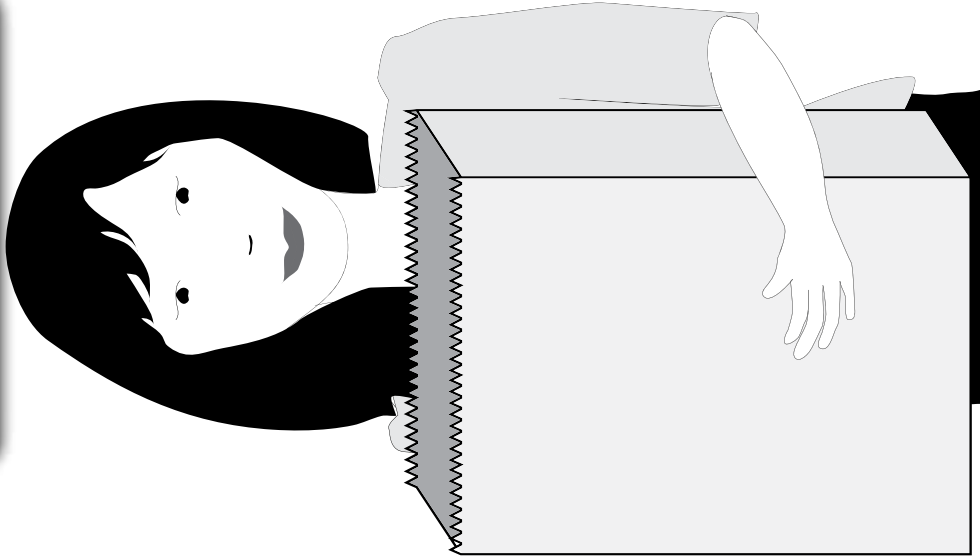
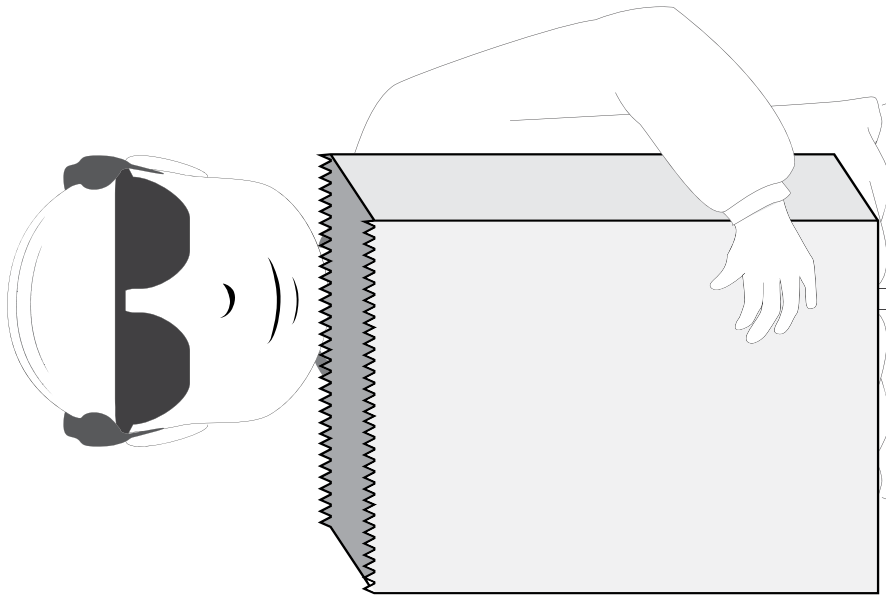
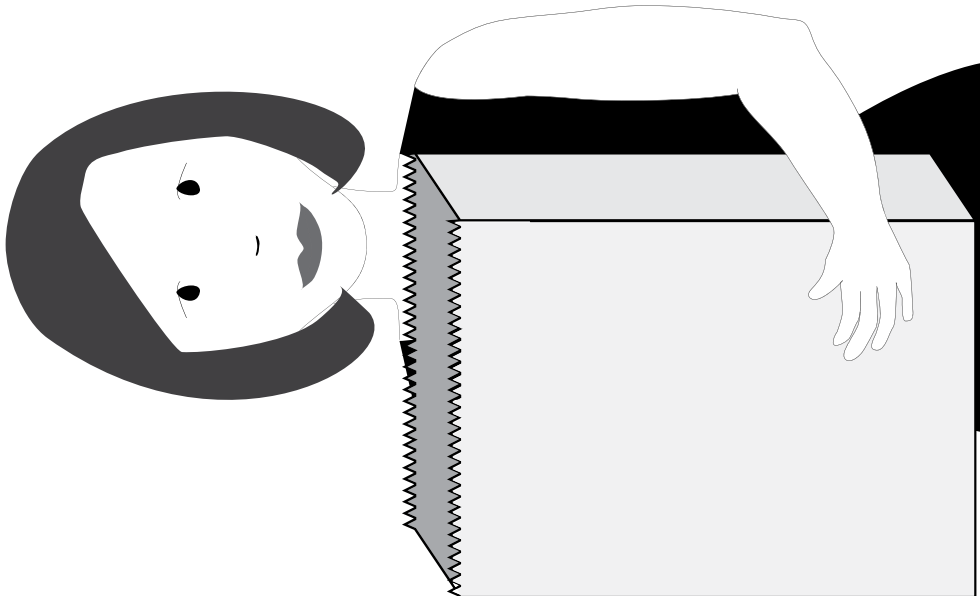
$$87 = \underline{\hspace{2cm}} \text{ tens } \underline{\hspace{2cm}} \text{ ones}$$

$$\underline{\hspace{2cm}} \text{ tens } \underline{\hspace{2cm}} \text{ ones } = 63$$

$$\underline{\hspace{2cm}} \text{ tens } \underline{\hspace{2cm}} \text{ ones } = 4$$

Equally share 43 marbles among 3 people.

Module MDWN
Lesson 10
Modeled Practice #1

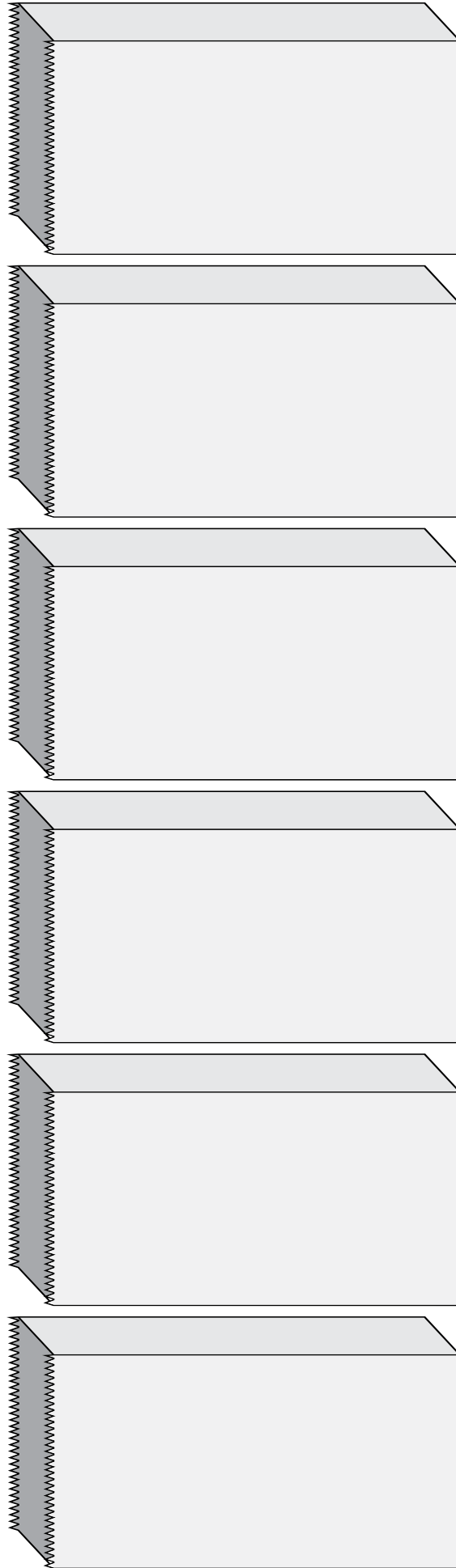


$$\begin{array}{r}
 \text{Total} \\
 \hline
 \text{Tens}
 \end{array}
 \begin{array}{r}
 \text{Total} \\
 \hline
 \text{Ones}
 \end{array}
 \begin{array}{r}
 \div \\
 \hline
 \text{\# of People}
 \end{array}
 =
 \begin{array}{r}
 \text{Tens} \\
 \hline
 \text{Share}
 \end{array}
 \begin{array}{r}
 \text{Ones} \\
 \hline
 \text{Share}
 \end{array}
 \begin{array}{r}
 \text{Equal Share} \\
 \hline
 \end{array}$$

R
Remainder



Equally share 73 marbles among 6 bags.



R
Remainder
(Left Over)

=
Tens Ones
Share Share }
Quotient (Equal Share)

÷
Divisor
(# of Bags)

Total Ones
Tens }
Dividend (Total)

STOP

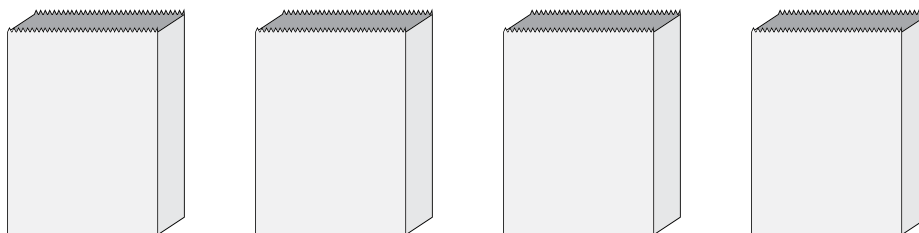
Draw base-10 materials to solve.

- 1.) Janice filled 6 baskets with equal amounts of biscuits. She had 74 biscuits to share among the baskets. How many biscuits did Janice place in each basket?

$$\begin{array}{r}
 \overline{\text{Total}} \quad \overline{\text{Total}} \\
 \text{Tens} \quad \text{Ones} \\
 \underbrace{\hspace{1.5cm}} \\
 \text{Dividend}
 \end{array}
 \div
 \begin{array}{r}
 \overline{\hspace{1.5cm}} \\
 \text{Divisor}
 \end{array}
 =
 \begin{array}{r}
 \overline{\hspace{1.5cm}} \quad \overline{\hspace{1.5cm}} \\
 \text{Tens} \quad \text{Ones} \\
 \text{Share} \quad \text{Share} \\
 \underbrace{\hspace{1.5cm}} \\
 \text{Quotient}
 \end{array}
 \begin{array}{l}
 \text{R } \overline{\hspace{1.5cm}} \\
 \text{Remainder}
 \end{array}$$

Use the base-10 pictures to solve.

2.) $\overline{) \begin{array}{r} 44 \\ 1 \end{array} \begin{array}{r} 22 \\ 22 \\ 22 \\ 22 \end{array}}$



$$\begin{array}{c} \overline{\text{Total}} \quad \overline{\text{Total}} \\ \text{Tens} \quad \text{Ones} \\ \underbrace{\hspace{1.5cm}} \\ \text{Dividend (Total)} \end{array} \div \overline{\text{Divisor}} = \begin{array}{c} \overline{\text{Tens}} \quad \overline{\text{Ones}} \\ \text{Share} \quad \text{Share} \\ \underbrace{\hspace{1.5cm}} \\ \text{Quotient (Equal Share)} \end{array} \begin{array}{c} R \quad \overline{\hspace{1cm}} \\ \text{Remainder} \\ \text{(Left Over)} \end{array}$$

Draw base-10 picture to solve.

3.) Equally share 38 marbles among 3 people.

$$\begin{array}{c}
 \text{Total} \quad \text{Total} \\
 \text{Tens} \quad \text{Ones} \\
 \hline
 \underbrace{\hspace{1.5cm}} \\
 \text{Dividend}
 \end{array}
 \div
 \begin{array}{c}
 \hline
 \text{Divisor}
 \end{array}
 =
 \begin{array}{c}
 \text{Tens} \quad \text{Ones} \\
 \text{Share} \quad \text{Share} \\
 \hline
 \underbrace{\hspace{1.5cm}} \\
 \text{Quotient (Equal Share)}
 \end{array}
 \begin{array}{c}
 R \quad \hline
 \text{Remainder} \\
 \text{(Left Over)}
 \end{array}$$

Use tens and ones to solve.

1.) Equally share 52 marbles among 4 customers.

$$\begin{array}{ccccccc}
 \overline{\text{Total}} & \overline{\text{Total}} & & \div & \overline{\text{Divisor}} & = & \overline{\text{Tens}} & \overline{\text{Ones}} & & \text{R} \\
 \text{Tens} & \text{Ones} & & & & & \text{Share} & \text{Share} & & \text{Remainder} \\
 & \underbrace{\hspace{2cm}} & & & & & \underbrace{\hspace{2cm}} & & & \text{(Left Over)} \\
 & \text{Dividend (Total)} & & & & & \text{Quotient (Equal Share)} & & &
 \end{array}$$

Write the division problem for the situations below.

2.) 36 acorns and 9 squirrels



Division problem: $\frac{\quad}{\text{Total}} \div \frac{\quad}{\text{Squirrels}}$

3.) 39 acorns and 3 squirrels



Division problem: $\frac{\quad}{\text{Total}} \div \frac{\quad}{\text{Squirrels}}$

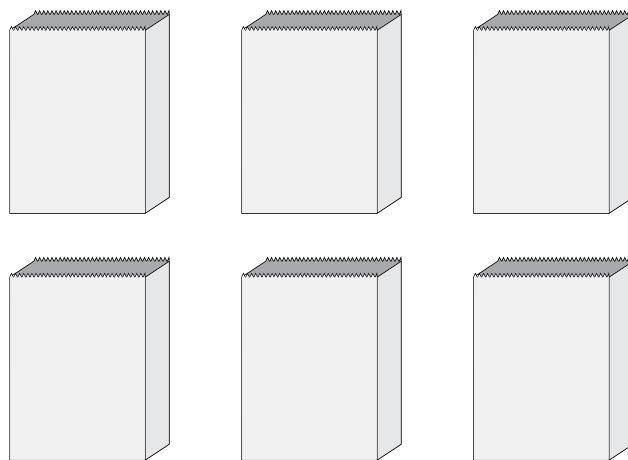
List a multiplication equation and a division equation for the number family 64, 8, and 512.

4.) _____

5.) _____

Use the base-10 picture to solve.

6.)



$$\begin{array}{ccccccc}
 \begin{array}{c} \text{Total} \\ \text{Tens} \end{array} & \begin{array}{c} \text{Total} \\ \text{Ones} \end{array} & \div & \begin{array}{c} \text{Divisor} \end{array} & = & \begin{array}{c} \text{Tens} \\ \text{Share} \end{array} & \begin{array}{c} \text{Ones} \\ \text{Share} \end{array} & \begin{array}{c} R \\ \text{Remainder} \\ \text{(Left Over)} \end{array} \\
 \underbrace{\hspace{1.5cm}} & & & & & \underbrace{\hspace{1.5cm}} & & \\
 \text{Dividend} & & & & & \text{Quotient (Equal Share)} & &
 \end{array}$$

Draw tens and ones to solve.

7.) Equally share 81 marbles between 5 people.

$$\begin{array}{c}
 \text{Total} \quad \text{Total} \\
 \text{Tens} \quad \text{Ones} \\
 \hline
 \underbrace{\hspace{2cm}} \\
 \text{Dividend}
 \end{array}
 \div
 \begin{array}{c}
 \hline
 \text{Divisor}
 \end{array}
 =
 \begin{array}{c}
 \text{Tens} \quad \text{Ones} \\
 \text{Share} \quad \text{Share} \\
 \hline
 \underbrace{\hspace{2cm}} \\
 \text{Quotient (Equal Share)}
 \end{array}
 \begin{array}{c}
 R \quad \hline
 \text{Remainder} \\
 \text{(Left Over)}
 \end{array}$$

Complete using the multiplication table.

1.) List three multiples of 7: _____, _____, _____

2.) List three multiples of 3: _____, _____, _____

Write the division problem as a multiplication problem with the missing fact.
 Then solve.

3.) $54 \div 9 = n$

_____ $\times$ _____ = _____

$n =$ _____

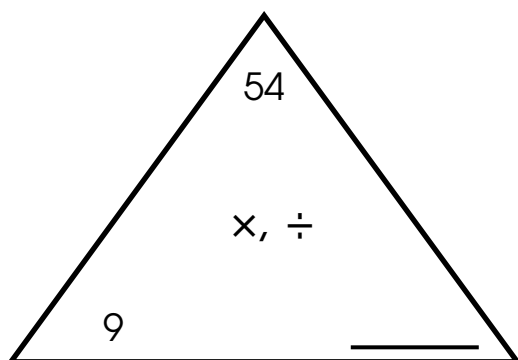
4.) $36 \div 6 = c$

_____ $\times$ _____ = _____

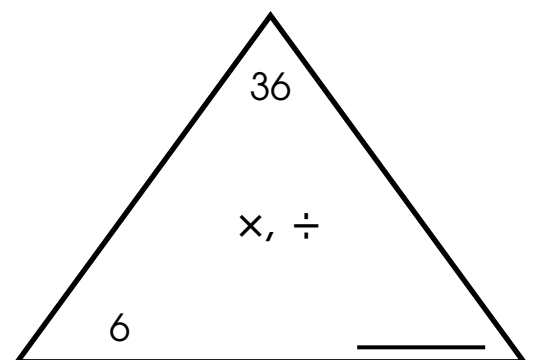
$c =$ _____

Complete the number family triangle.

5.)



6.)



$$30 \div 6 = n \quad \text{or} \quad n \times 6 = 30$$

$$n = \underline{\hspace{2cm}}$$

$$45 \div 5 = b \quad \text{or} \quad b \times 5 = 45$$

$$b = \underline{\hspace{2cm}}$$

$$34 \div 5$$

Multiples of 5:

Estimation: _____

$$34 \div 5 \approx \underline{\hspace{2cm}}$$

“is about”

$$255 \div 4 = f \quad \text{or} \quad f \times 4 = 255$$

Multiples of 4:

Estimation: _____

$$255 \div 4 \approx \underline{\hspace{2cm}}$$

“is about”

Estimate an answer.

- 1.) Bridget collected 295 signatures for the petition. If she collected about the same number of signatures each day for 7 days, about how many signatures did we get each day?

_____ $\div$ _____ = _____ or _____ $\times$ _____ = _____

Multiples of 7: _____

Estimation: _____

$$\frac{\text{---}}{\text{---}} \div \frac{\text{---}}{\text{---}} \approx \frac{\text{---}}{\text{---}}$$

about _____ signatures

2.) $56 \div 6$

or × =

Multiples of 6: _____

Estimation: _____

$$\frac{\text{---}}{\text{---}} \div \frac{\text{---}}{\text{---}} \approx \frac{\text{---}}{\text{---}}$$

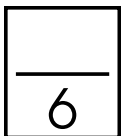
3.) $370 \div 9$

or _____ $\times$ _____ = _____

Multiples of 9: _____

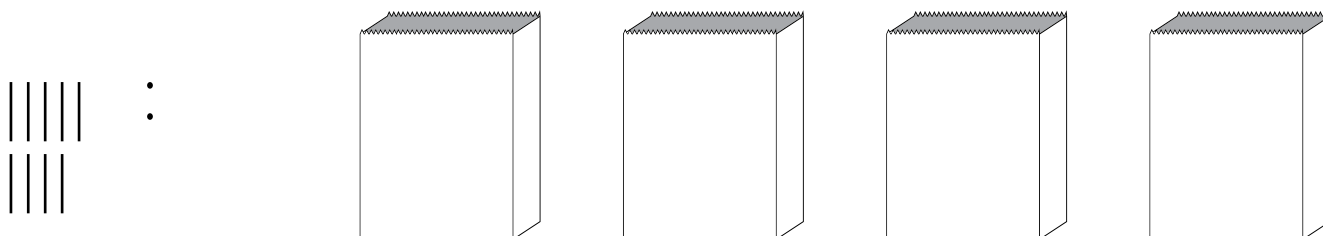
Estimation: _____

_____ $\div$ _____ $\approx$ _____



Use base-10 pictures to solve.

1.) Equally share 92 candies among 4 customers.



$$\left(\begin{array}{c} \text{Total} \\ \text{Tens} \end{array} \quad \begin{array}{c} \text{Total} \\ \text{Ones} \end{array} \right) \div \text{Divisor} = \text{Quotient} \quad \text{R } \text{Remainder}$$

Dividend

Estimate.

2.) 52×6

$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

3.) $\begin{array}{r} 84 \\ \times 5 \\ \hline \end{array}$

$\begin{array}{r} \underline{\quad} \\ \times \underline{\quad} \\ \hline \end{array}$

Estimate an answer.

- 4.) Miguel shipped presents to his nieces and nephews who are all under the age of 10. He shipped 6 boxes of presents. Miguel spent \$315 in shipping costs. If each box cost about the same to ship, how much does it cost to ship one box?

_____ $\div$ _____ = _____ Or _____ $\times$ _____ = _____

Multiples of 6: _____

Estimation: _____

$$\frac{\text{---}}{\text{---}} \div \frac{\text{---}}{\text{---}} \approx \frac{\text{---}}{\text{---}}$$

about \$ _____

- 5.)** $61 \div 8$

or × =

Multiples of 8: _____

Estimation: _____

$$\frac{\text{---}}{\text{---}} \approx \text{---}$$

6.) $482 \div 5$

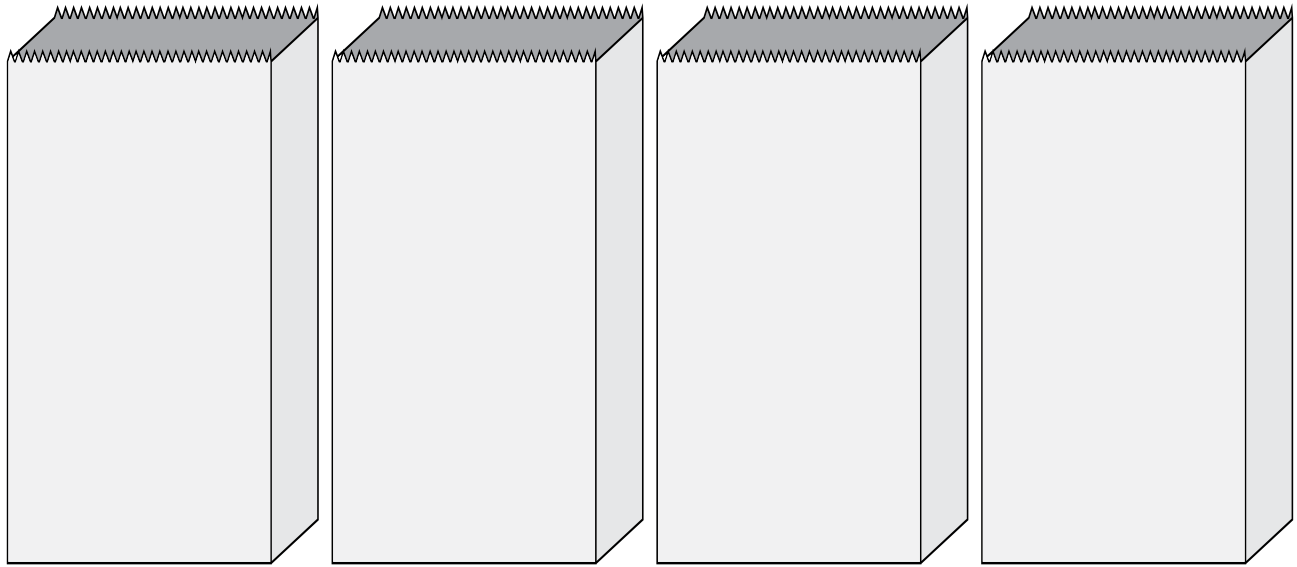
or _____ $\times$ _____ = _____

Multiples of 5: _____

Estimation: _____

_____ $\div$ _____ $\approx$ _____

Equally share 51 marbles among 4 bags.



$$51 \div 4$$

Estimation: _____

$$51 \div 4 \approx \underline{\hspace{2cm}}$$

"is about"

Total Total Tens Ones ÷ Divisor = Tens Ones Share Share R Remainder
} Dividend } Quotient

Estimate the answer.

1.) $62 \div 5$ or $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

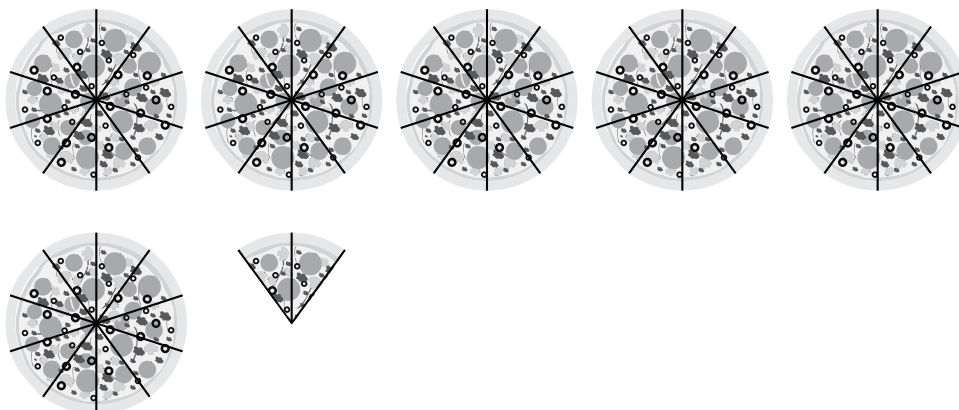
Estimation: $\underline{\hspace{2cm}}$

$\underline{\hspace{2cm}}$

$62 \div 5 \approx$ $\underline{\hspace{1cm}}$
is about

Use base-10 materials to solve.

2.)



3.) Write the division equation for the picture above.

$\underline{\hspace{1cm}}$	$\div$	$\underline{\hspace{1cm}}$	$=$	$\underline{\hspace{1cm}}$	R $\underline{\hspace{1cm}}$
Total Tens		Divisor		Quotient	Remainder

4.) Christian had 72 baseball cards he wanted to share between himself and his 4 friends. About how many baseball cards does Christian and each of his friends get?

What is the problem asking you to find?

_____ $\div$ _____ = _____ or _____ $\div$ _____ = _____

Estimation: _____

If Christian were to share the cards equally, exactly how many cards would each person get?

How many are left over?

Estimate the answer.

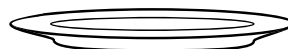
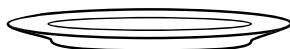
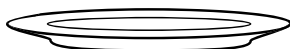
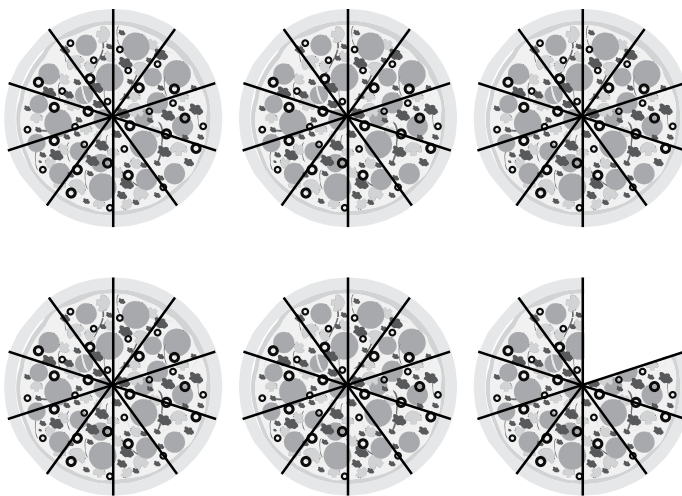
5.) $18 \div 4$ or $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

Estimation: $\underline{\hspace{2cm}}$

$\underline{\hspace{2cm}}$

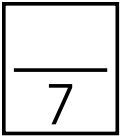
$18 \div 4 \approx$ $\underline{\hspace{2cm}}$
is about

6.) Use the picture to share the 58 slices of pizza among 4 people.



7.) Write the division sentence for the picture above.

$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ R } \underline{\hspace{2cm}}$
Total Tens Total Ones Divisor Quotient Remainder



Use the base-10 picture to solve.

1.) Equally share 52 acorns among 4 squirrels.



Division equation:

$$\begin{array}{ccccccc} \underline{\hspace{1cm}} & \div & \underline{\hspace{1cm}} & = & \underline{\hspace{1cm}} & R & \underline{\hspace{1cm}} \\ \text{Total} & & \text{Squirrels} & & \text{Equal} & & \text{Left} \\ & & & & \text{Share} & & \text{Over} \end{array}$$

2.) Estimate the answer.

58 $\div$ 7 or $\times$ =

Estimation: _____

58 $\div$ 7 $\approx$ _____
is about _____

3.)

$$423 \div 8 \approx 5$$

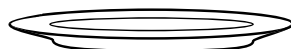
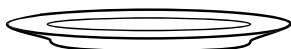
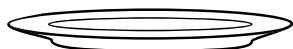
$$400 \div 8 = 5$$

Is this estimation true or false? _____

Why? _____

Draw base-10 pictures to solve. Choose the correct answer.

- 4.) Rachel ordered 38 beads for 3 necklaces. After the 3 necklaces are made with equal beads on each, how many beads will be left over?



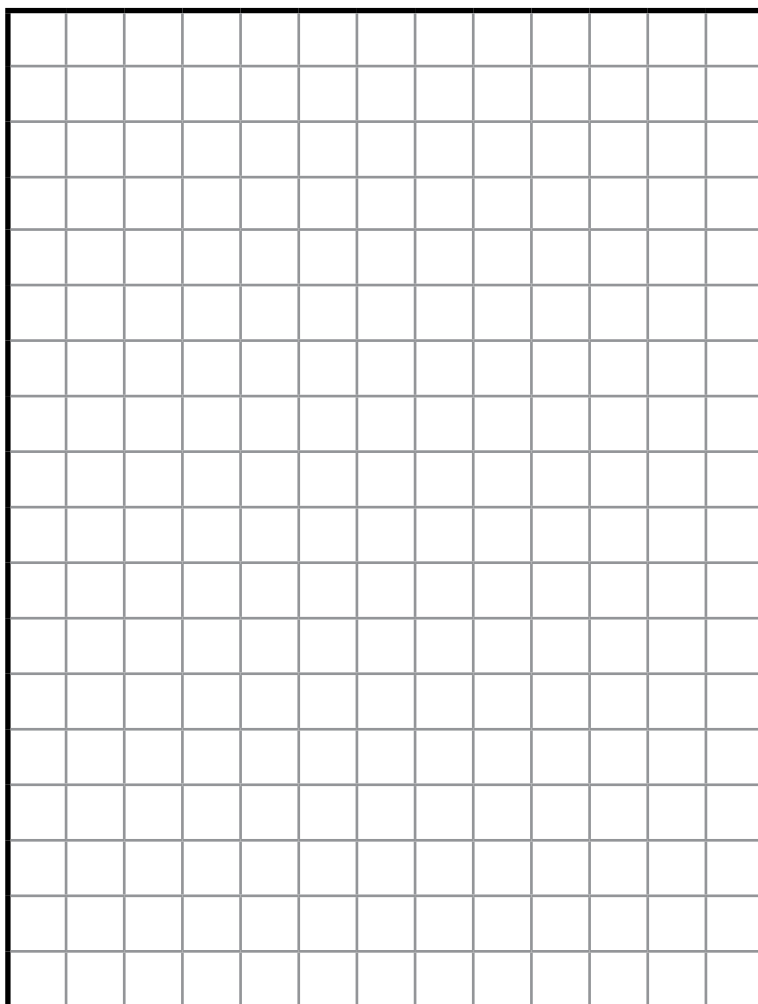
A 1 left over

C 2 left over

B 5 left over

D 3 left over

_____ × _____



Estimate:

18
↓

×

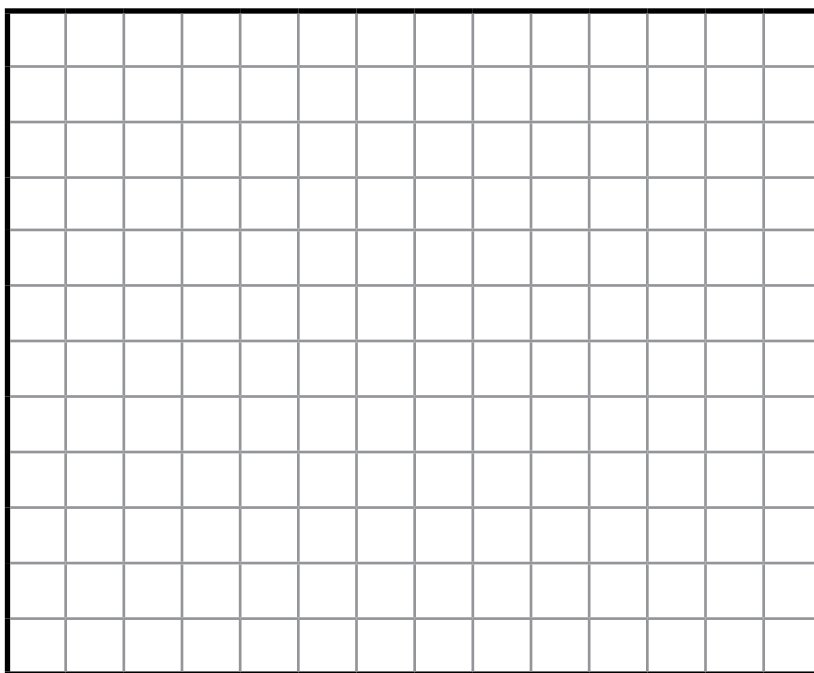
13
↓

18
× 13
——

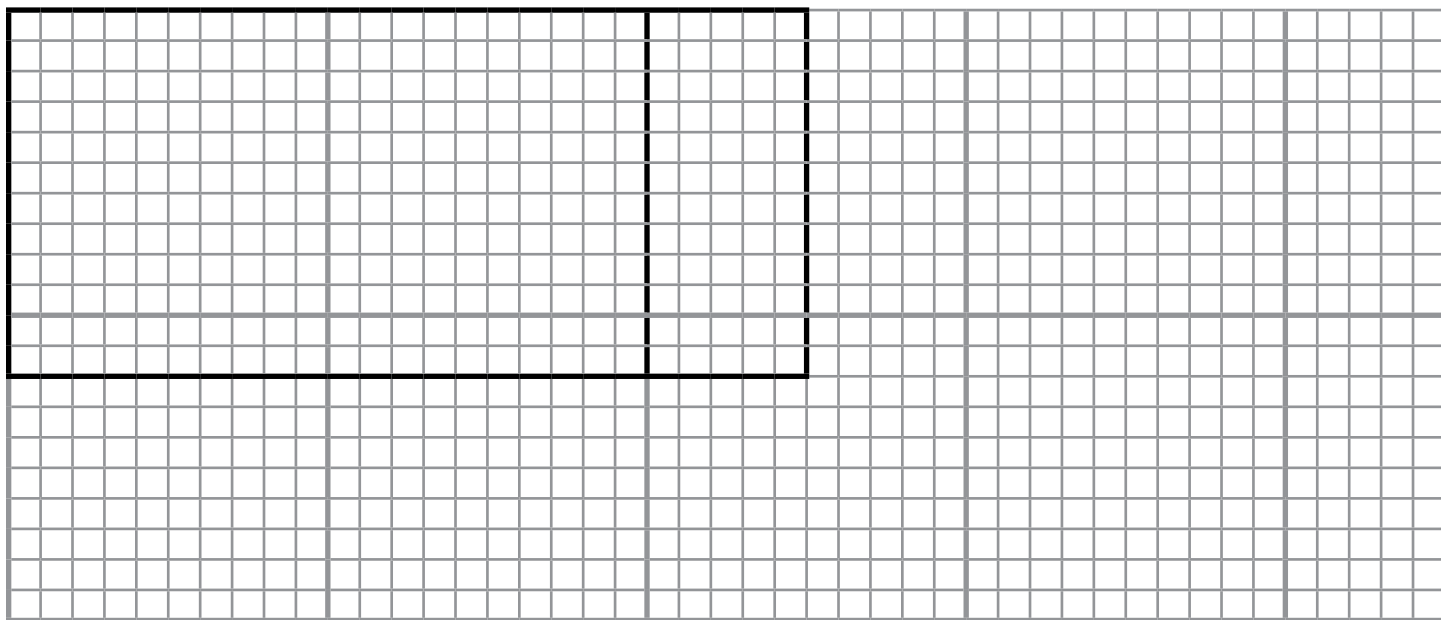
_____ × _____ = _____

Solve using the partial-products method.

- 1.) Elijah had a birthday party at Go Cart Racing Track. He had 12 friends attend his party. It cost each friend \$14 to race a go-cart around the track 5 times. The birthday boy was free. How much money was it for all 12 friends to race the track?



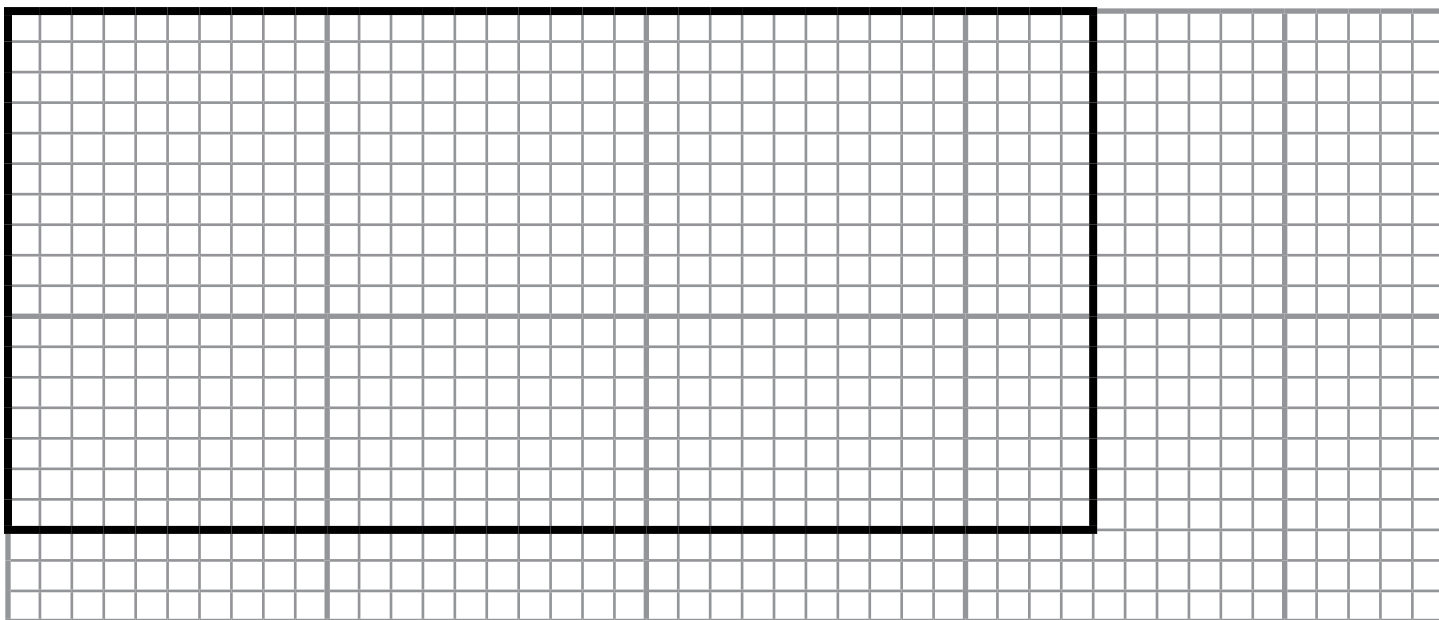
- 2.) Estimate the area, break apart the area model, label the dimensions, and then solve using partial products.



Estimate:

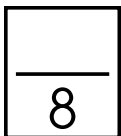
$$\begin{array}{ccc}
 12 & \times & 25 \\
 \downarrow & & \downarrow \\
 \underline{\quad} & \times & \underline{\quad} = \underline{\quad}
 \end{array}$$

- 3.) Estimate the area, break apart the area model, label the dimensions, and then solve using partial products.



Estimate:

$$\begin{array}{ccc}
 17 & \times & 34 \\
 \downarrow & & \downarrow \\
 \underline{\quad} & \times & \underline{\quad} = \underline{\quad}
 \end{array}$$



Estimate.

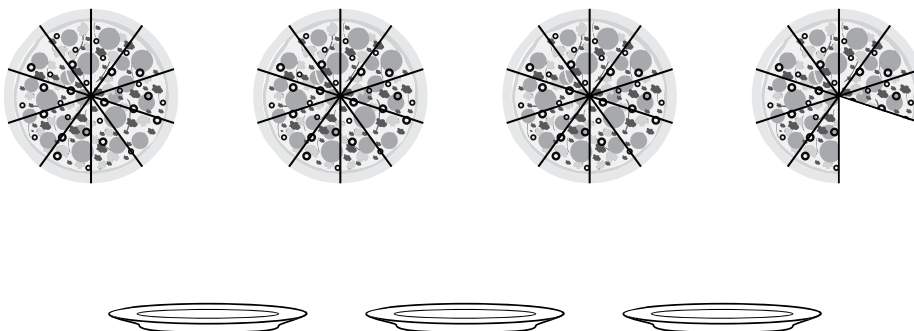
1.) $38 \div 3$ or $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

Multiples of 3: $\underline{\hspace{2cm}}$

Estimation: $\underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}}$

$38 \div 3 \approx \underline{\hspace{2cm}}$

Use the picture to solve $38 \div 3$.

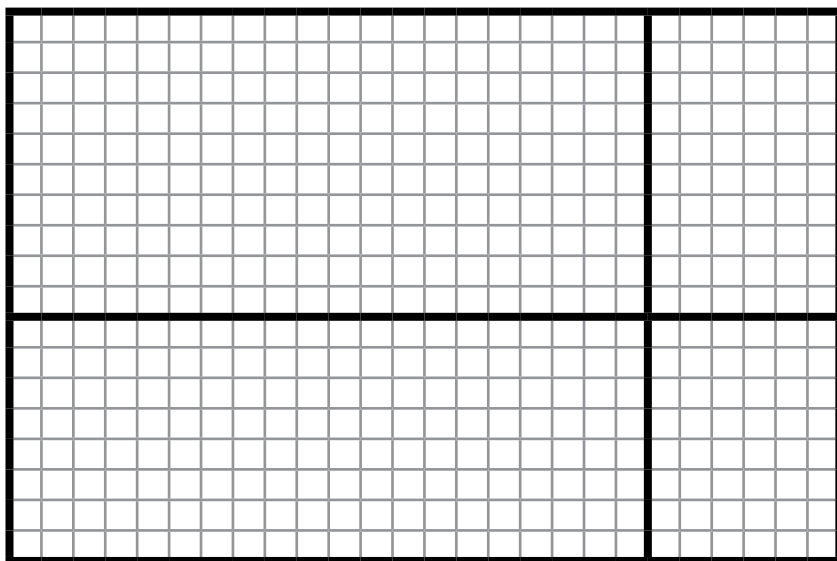


2.) $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ R $\underline{\hspace{2cm}}$
Total Total Divisor Quotient
Tens Ones (# of Sharers) (Equal
Share)
Remainder
(# Left Over)

3.) Estimate:

$$\begin{array}{ccc} 18 & \times & 26 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

4.) Label the dimensions and then solve using partial products.

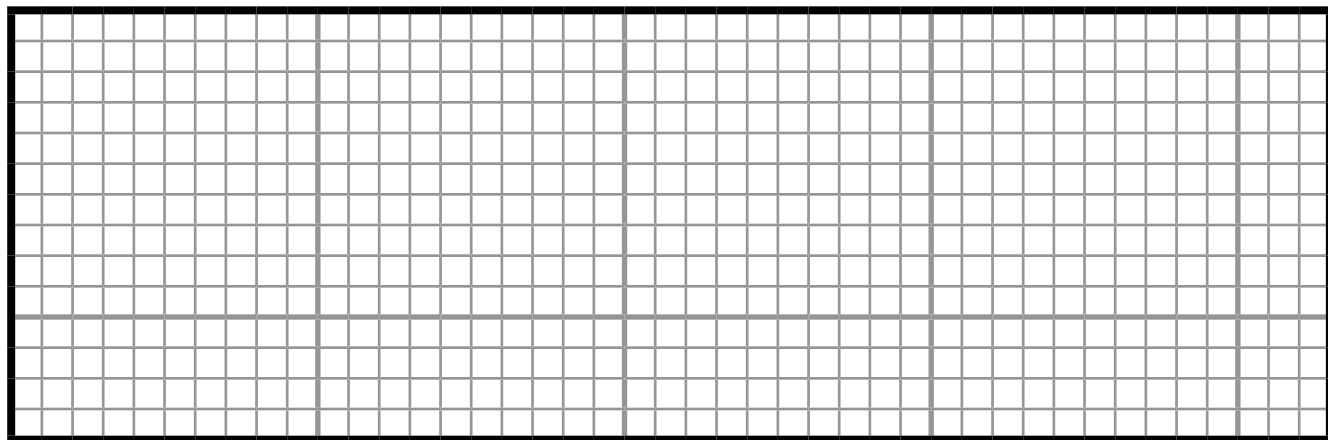


5.) Estimate:

$$\begin{array}{ccc} 14 & \times & 43 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

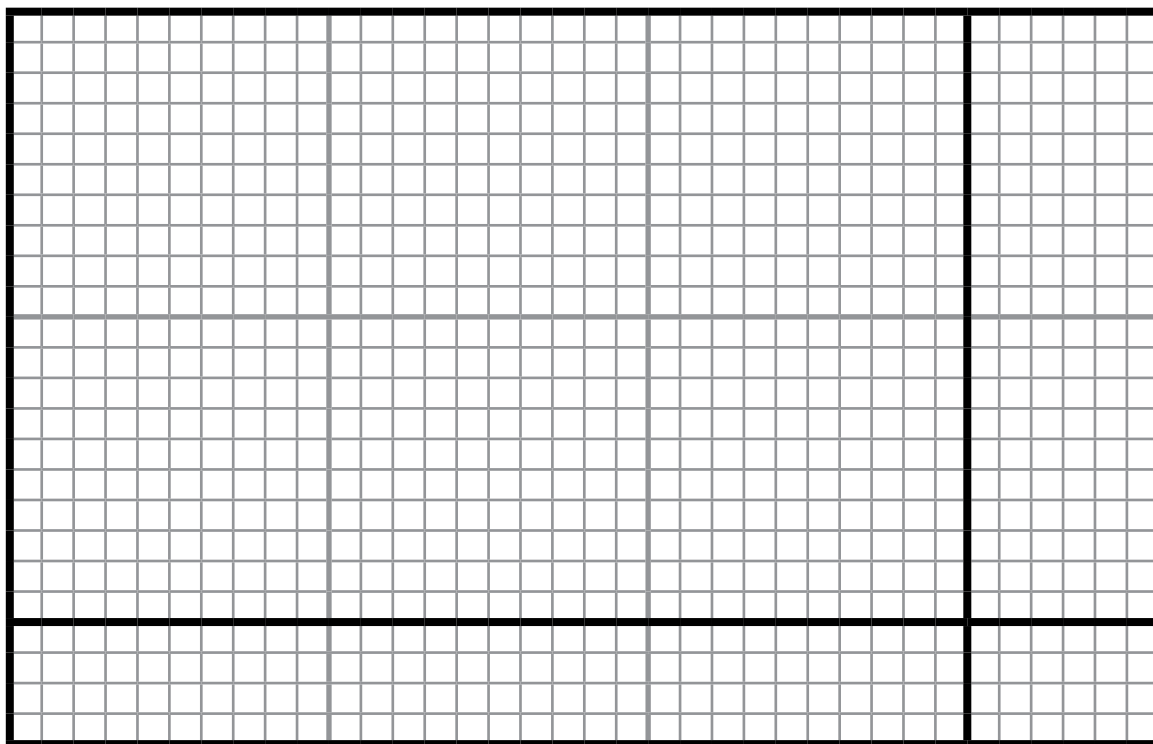
6.) Break apart by using partial products and label the dimensions.

$$14 \times 43$$

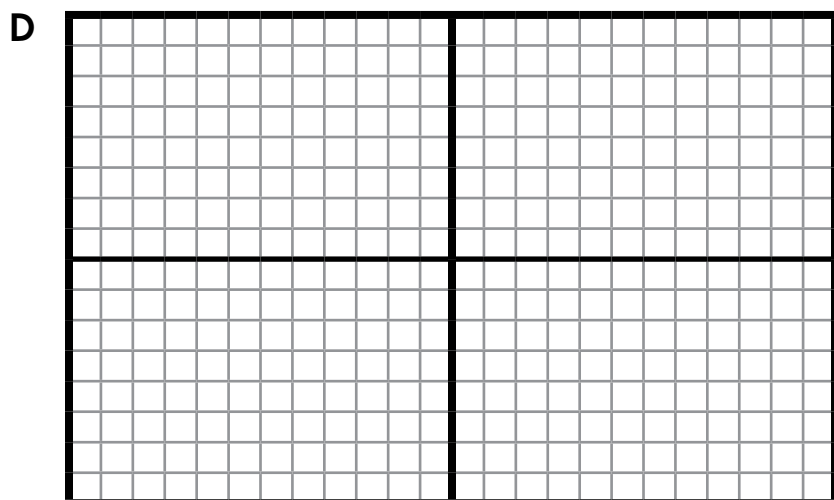
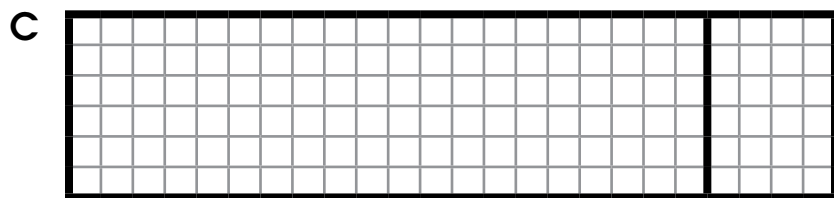
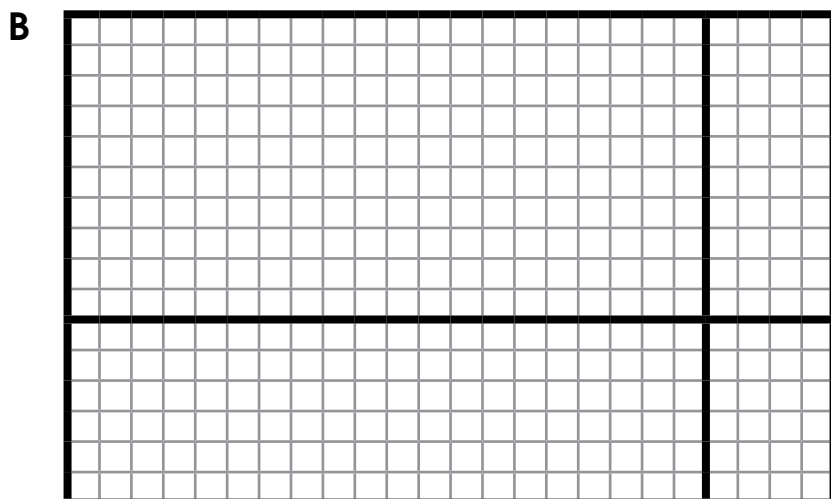
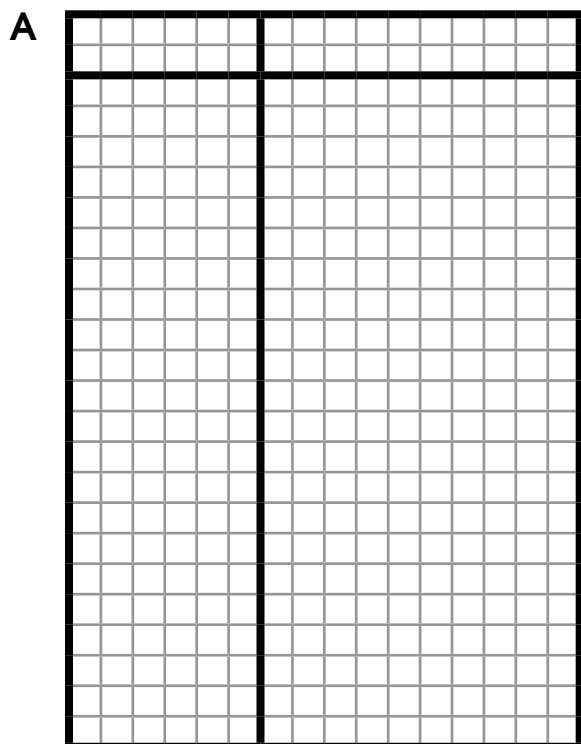


Estimate the area, label the dimensions, and use the partial products to solve.

- 7.) A community group is painting a rectangular mural that will be divided into 4 smaller rectangles. The dimensions of the mural are 24 feet by 36 feet. They divided the mural as shown below. What is the area of the entire mural?



8.) Dan is plotting the land for his farm. He knows that the dimensions of his land are 16 acres by 24 acres, but he wants to figure out the area. Choose the area model that correctly represents the partial products to solve.

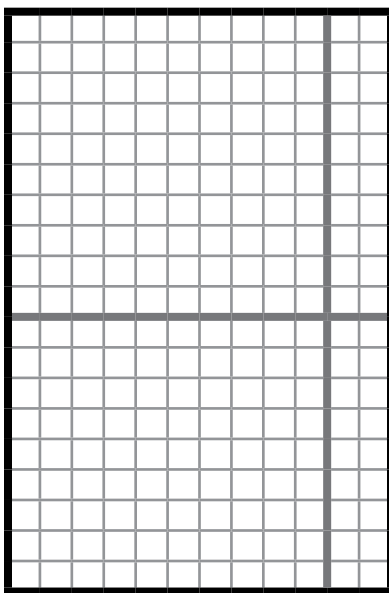


$$19 \times 12$$

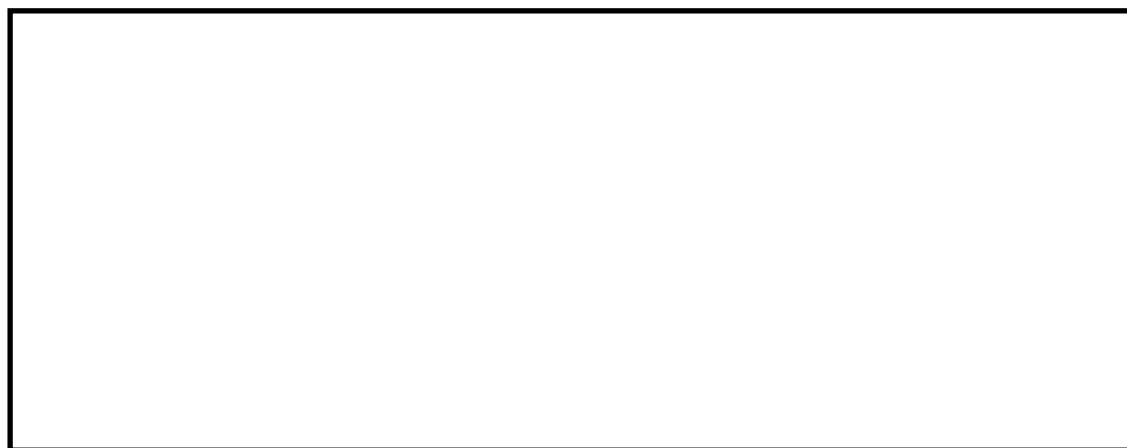
Estimate: 19 × 12

↓ ↓

_____ × _____ = _____



____ × ____



32

57

Estimate: 32 × 57

↓ ↓

____ × ____ = ____

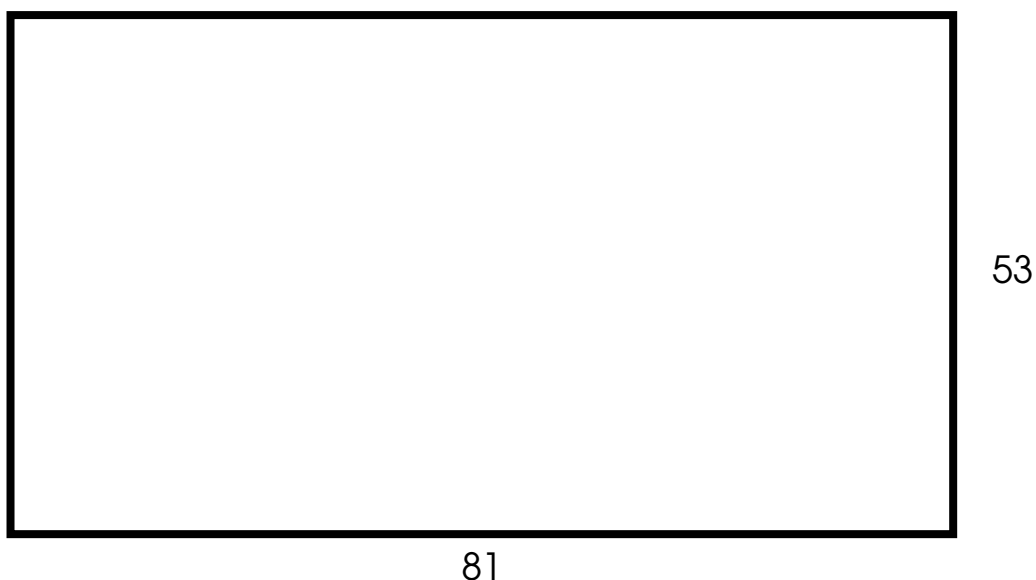
Marcus volunteers at his local food bank. If the food bank collects 75 pounds of food every day, how much food will the food bank collect in October, which has 31 days?

Estimate: _____ × _____ = _____

1.) Solve using partial products.

Estimate:

$$\begin{array}{ccc} 53 & \times & 81 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$



2.) Solve using partial products.

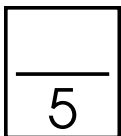
Estimate:

$$\begin{array}{ccc} 28 & \times & 73 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$



Use the partial-products method to solve. Draw an area model to represent the problem.

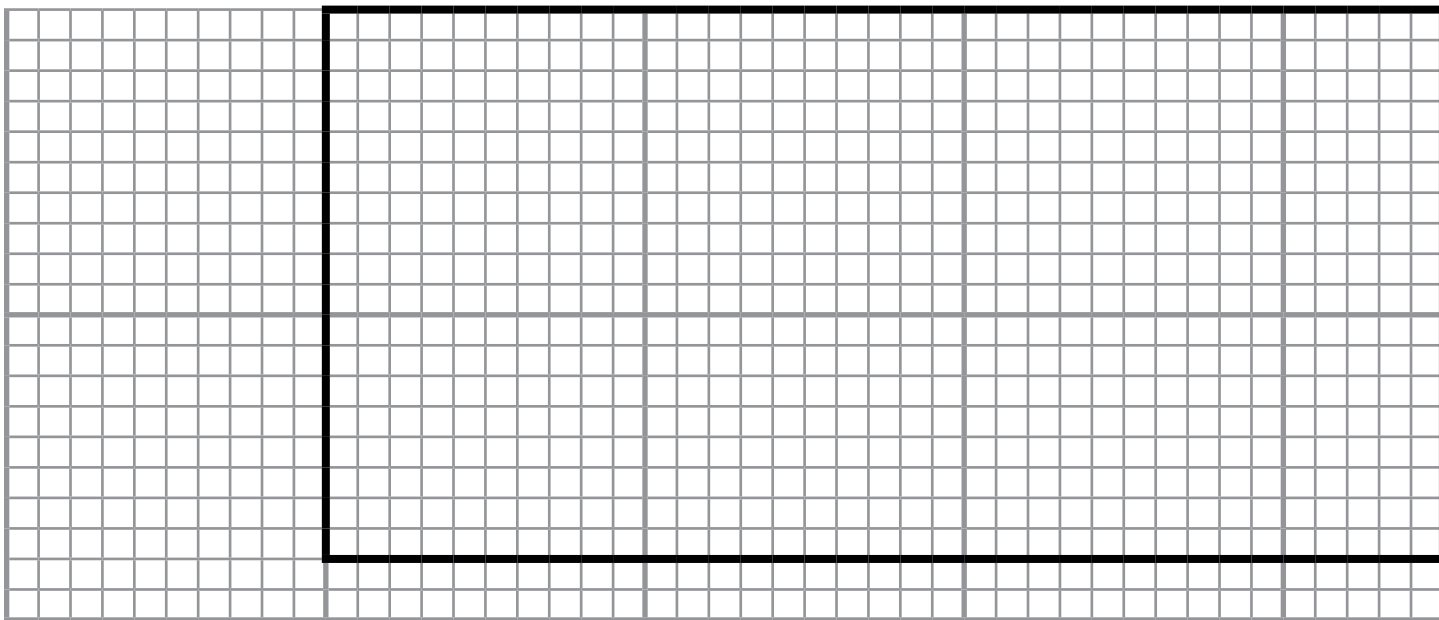
- 3.) In Leslie's school, there are 28 desks in each classroom. There are 42 classrooms in the building. 632 students attend Leslie's school. How many desks are there altogether?



1.) Estimate:

$$\begin{array}{ccc} 18 & \times & 35 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

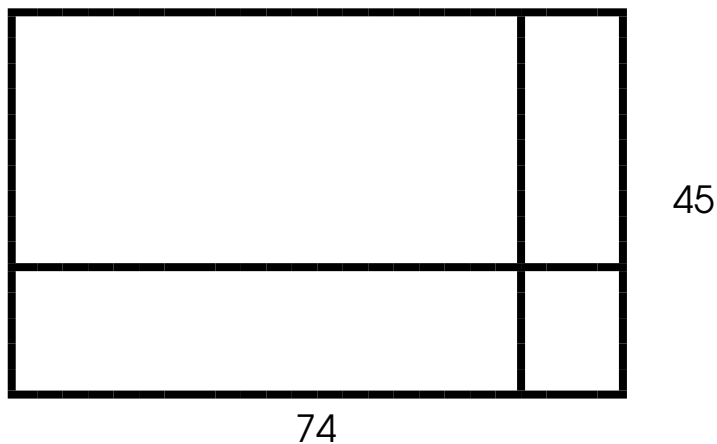
2.) Label the dimensions of the area model broken into partial products. List the partial products.



- 3.) Estimate the area, break apart the area model, label the dimensions, and then solve using partial products.

Estimate:

$$\begin{array}{ccc} 45 & \times & 74 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$



4.) Break apart the area model. Label the dimensions, then solve using partial products.

Estimate:

$$\begin{array}{ccc} 24 & \times & 48 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

$$24 \times 48$$



5.) Nyja reads 24 pages in her book each day. If she reads for 14 days, how many pages will she have read? Choose the correct way to break apart the factors.

A $10 + 10 + 4$
 $10 + 4$

C $22 + 4$
 $12 + 2$

B $12 + 12$
 $7 + 7$

D $20 + 4$
 $10 + 4$

$$\begin{array}{ccc} 24 & \times & 48 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

$$59 \times 71 \neq 1,039$$

$$5 \times 70 = 350$$

$$50 \times 1 = 50$$

$$1 \times 9 = 9$$

$$9 \times 70 = 630$$

$$350 \times 50 = 400$$

$$9 \times 630 = 639$$

$$400 \times 639 = 1,039$$

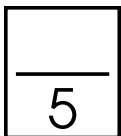
Use the partial-product method and multiplication square to solve.

1.) $37 \times 68 = \underline{\hspace{2cm}}$

$$\begin{array}{ccc}
 37 & \times & 68 \\
 \downarrow & & \downarrow \\
 \underline{\hspace{1cm}} & \times & \underline{\hspace{1cm}} = \underline{\hspace{1cm}}
 \end{array}$$

2.) $29 \times 42 = \underline{\hspace{2cm}}$

$$\begin{array}{ccc}
 29 & \times & 42 \\
 \downarrow & & \downarrow \\
 \underline{\hspace{1cm}} & \times & \underline{\hspace{1cm}} = \underline{\hspace{1cm}}
 \end{array}$$



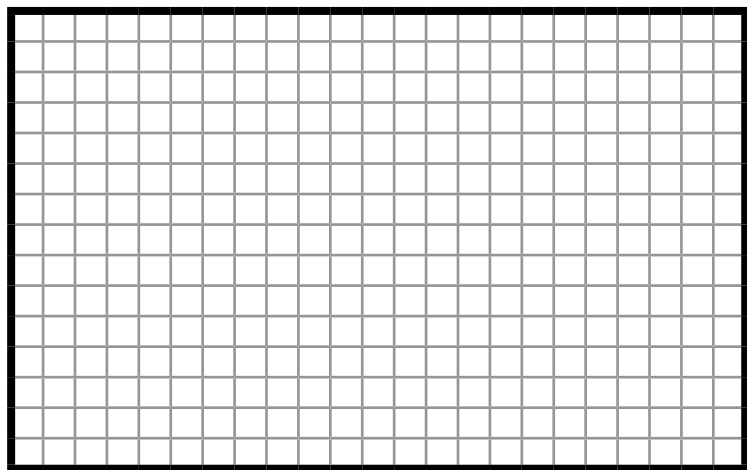
Module MDWN
Lesson 15
Independent Practice

Solve using the partial-product method and the area model.

1.) 15×23



_____ $\times$ _____ = _____

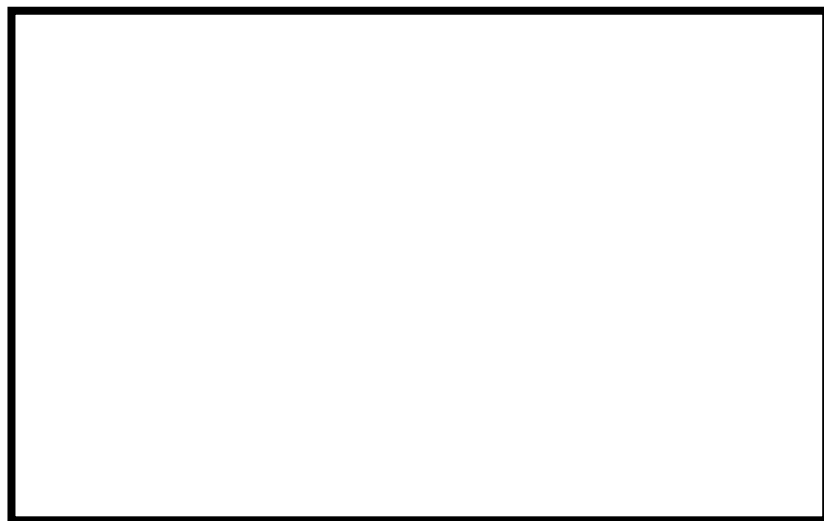


$15 \times 23 =$ _____

2.) 62×59



_____ $\times$ _____ = _____



$62 \times 59 =$ _____

Solve using the partial-product method and the multiplication square.

3.) 76×43



_____ $\times$ _____ = _____

$76 \times 43 =$ _____

Solve using the partial-product method and the multiplication square.

4.) 88×31
 $\downarrow \quad \quad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$88 \times 31 = \underline{\quad}$

Choose the correct answer.

5.) Brittany was using the multiplication square to solve 92×87 . Which square is correct?

A

	8	7
9		
2		

C

	80	2
90		
7		

B

	80	7
90		
2		

D

	8	2
9		
7		

$$\begin{array}{ccc} 28 & \times & 35 \\ \downarrow & & \downarrow \\ 30 & \times & 40 = 1,200 \end{array}$$

	30	5
20	$20 + 30 = 50$	$20 + 5 = 25$
8	$8 + 30 = 38$	$8 + 5 = 13$

$$50 + 25 = 75$$

$$38 + 13 = 51$$

$$75 + 51 = 126$$

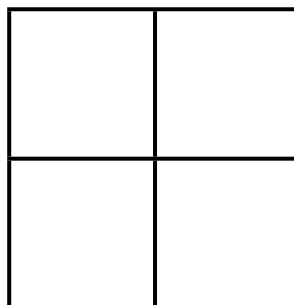
$$\begin{array}{ccc} 45 & \times & 64 \\ \downarrow & & \downarrow \\ \underline{\quad} & \times & \underline{\quad} = \underline{\quad} \end{array}$$

Raul's car can drive 28 miles on 1 gallon of gas. If he used 37 gallons of gas this month, how far did he drive?

Use the partial-product method and multiplication square to solve.

1.) 42×93

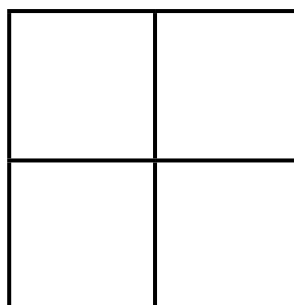
$\downarrow$ $\downarrow$
 _____ $\times$ _____ = _____



$42 \times 93 =$ _____

2.) 15×82

$\downarrow$ $\downarrow$
 _____ $\times$ _____ = _____



$15 \times 82 =$ _____

Choose the best answer.

- 1.) Phillip's work is shown below. He made a mistake but is not sure where. What mistake did Phillip make?

$$\begin{array}{r} 15 \\ \downarrow \\ 40 \end{array} \times \begin{array}{r} 82 \\ \downarrow \\ 40 \end{array}$$

$$40 \times 40 = 1,600$$

	40	2
30	$30 \times 40 = 120$	$30 \times 2 = 60$
7	$7 \times 40 = 280$	$7 \times 2 = 14$

$$120 + 60 = 180$$

$$280 + 14 = 294$$

$$180 + 294 = 474$$

$$40 \times 40 = 1,600$$

- A** $30 \times 40 \neq 120$
- B** $30 \times 2 \neq 60$
- C** $180 + 294 \neq 474$
- D** $40 \times 40 \neq 1,600$

Use the partial-product method and multiplication square to solve.

2.) $\begin{array}{r} 81 \\ \downarrow \end{array} \times \begin{array}{r} 13 \\ \downarrow \end{array}$

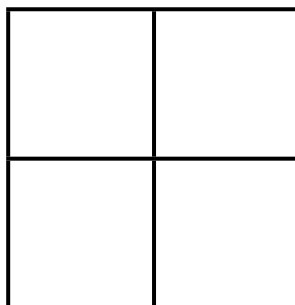
$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$81 \times 13 = \underline{\quad}$$

Use the partial-product method and multiplication square to solve.

3.) 55×94

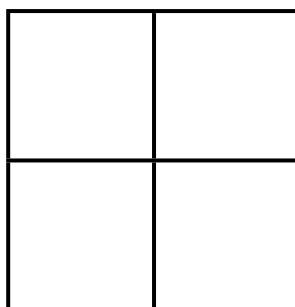
$\downarrow \quad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



$55 \times 94 = \underline{\quad}$

4.) 72×32

$\downarrow \quad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



$72 \times 32 = \underline{\quad}$

Choose the correct answer.

5.) Mrs. Jimenez ordered 38 boxes of pencils for the schools. If there are 24 pencils in each box, how many total pencils did she order?

A

	20	4
30	600	160
8	240	80

$$600 + 160 = 760$$

$$240 + 80 = 320$$

$$760 + 320 = 1,080$$

B

	20	4
30	600	120
8	160	32

$$600 + 120 = 720$$

$$160 + 32 = 192$$

$$720 + 192 = 912$$

C

	8	4
30	240	120
20	100	80

$$240 + 120 = 360$$

$$100 + 80 = 180$$

$$360 + 180 = 540$$

D

	20	4
30	60	120
8	140	16

$$60 + 120 = 180$$

$$140 + 16 = 156$$

$$180 + 156 = 336$$

Complete using the multiplication table.

1.) List the multiples of 6:

2.) $17 \div 4 \approx$ _____

_____ $\div 4 \approx$ _____

_____ $\div 4 \approx$ _____

3.) $29 \div 8 \approx$ _____

_____ $\div 8 \approx$ _____

_____ $\div 8 \approx$ _____

4.) $51 \div 7 \approx$ _____

_____ $\div 7 \approx$ _____

_____ $\div 7 \approx$ _____

_____ hundreds _____ tens _____ ones
Base-10 Form

Standard Form

Expanded Form

_____ hundreds _____ tens _____ ones
Base-10 Form

Expanded Form

Using base-10 materials, write the number in different forms.

1.) Place 3 hundreds, 2 tens, and 4 ones on your desk.

What number did you build? _____
Standard Form

How many groups of 100? _____

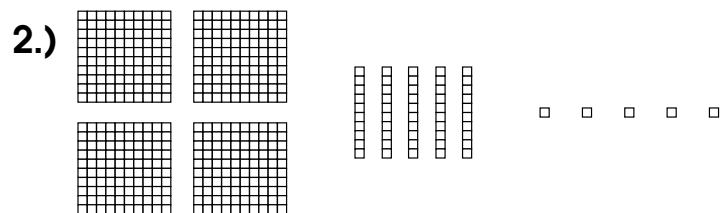
How many groups of 10? _____

How many groups of 1? _____

Expanded Form

Break apart the number in another way. _____

Using the picture below, write the number in different forms.



How many in all? _____
 Standard Form

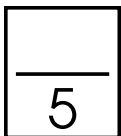
How many groups of 100? _____

How many groups of 10? _____

How many groups of 1? _____

 Expanded Form

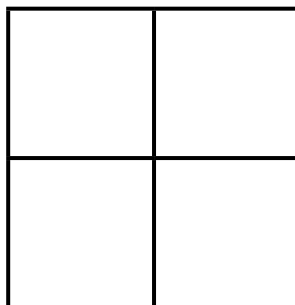
Break apart the number in another way. _____



Solve using the partial-product method and multiplication square.

1.) 45×26

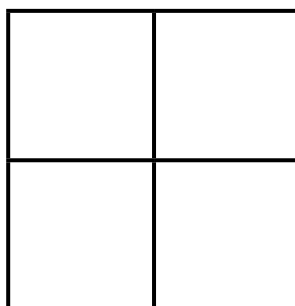
$\downarrow \quad \downarrow$
____ $\times$ ____ = ____



$45 \times 26 = \underline{\hspace{2cm}}$

2.) 14×56

$\downarrow \quad \downarrow$
____ $\times$ ____ = ____



$14 \times 56 = \underline{\hspace{2cm}}$

3.) Place 7 hundreds, 5 tens, and 1 one in front of you.

What number did you build? _____
Standard Form

How many groups of 100? _____

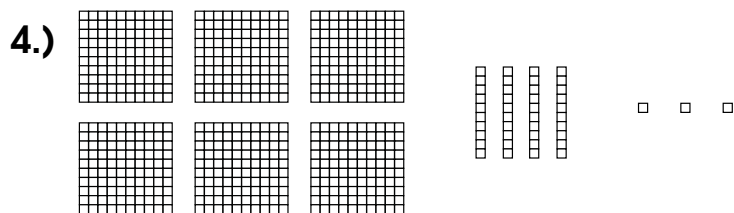
How many groups of 10? _____

How many groups of 1? _____

Expanded Form

Break apart the number in another way. _____

Using the picture below, write the number in different forms.



How many in all? _____
 Standard Form

How many groups of 100? _____

How many groups of 10? _____

How many groups of 1? _____

 Expanded Form

Break apart the number in another way. _____

Choose the best answer.

5.) Jerry is using the partial-product method to decompose 412. He writes $400 + 10 + 2$ for the expanded form, and then breaks apart each value. What is another way Jerry can write this number?

- A $400 + 20 + 1$
- B $300 + 20 + 2$
- C $300 + 12$
- D $300 + 110 + 2$

1.) _____

Standard Form

_____ hundreds _____ tens _____ ones

Base-10 Form

Expanded Form

2.) _____

Standard Form

_____ hundreds _____ tens _____ ones

Base-10 Form

Expanded Form

3.) _____

Standard Form

_____ hundreds _____ tens _____ ones

Base-10 Form

Expanded Form

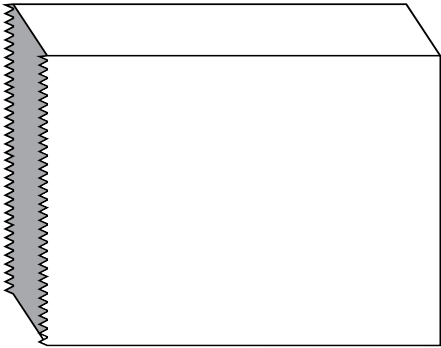
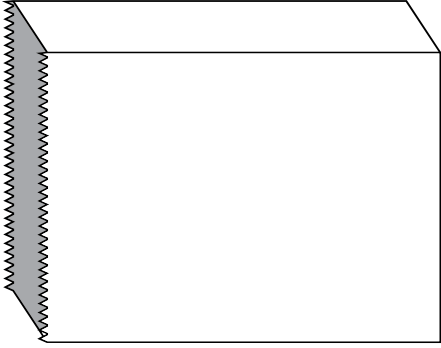
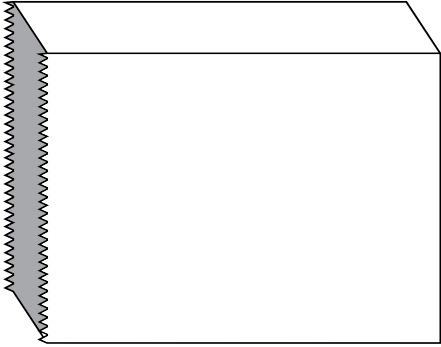
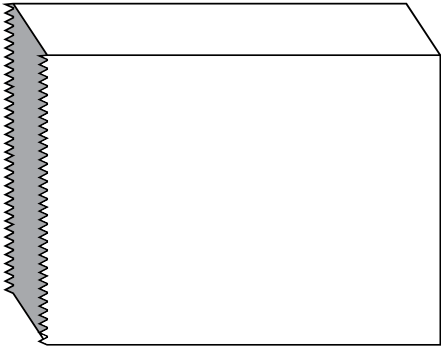
4.) _____

Standard Form

_____ hundreds _____ tens _____ ones

Base-10 Form

Expanded Form



Tens

Ones

Dividend

÷

Divisor

=

Tens

Ones

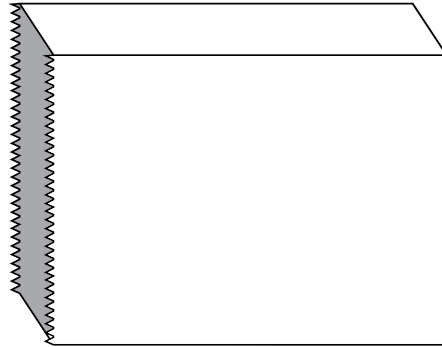
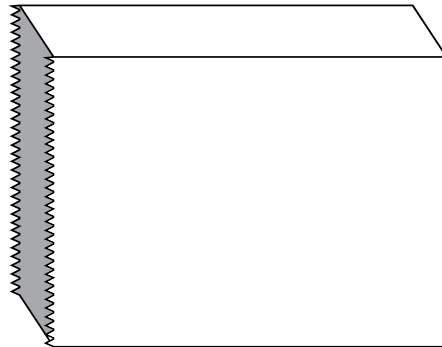
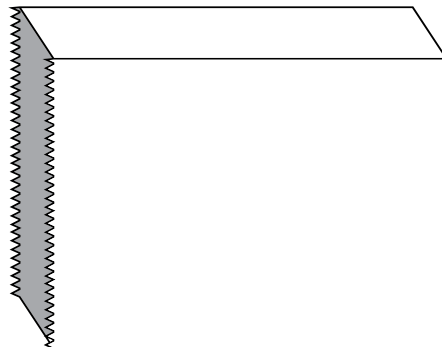
Equal

Share

Quotient

R

Remainder



$\overline{\hspace{1cm}}$ Hundreds $\overline{\hspace{1cm}}$ Tens $\overline{\hspace{1cm}}$ Ones
 $\div$

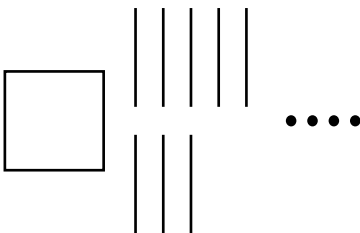
$\underbrace{\hspace{10em}}$
 Dividend

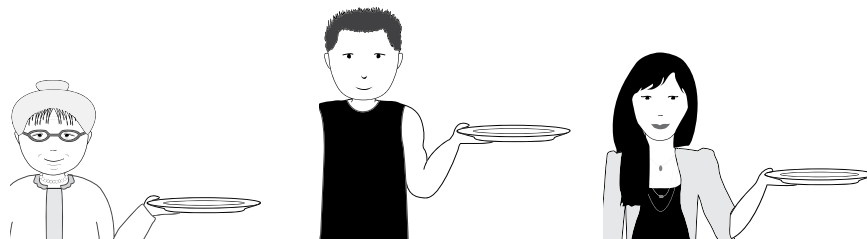
$=$

$\overline{\hspace{1cm}}$ Divisor	$\overline{\hspace{1cm}}$ Hundreds	$\overline{\hspace{1cm}}$ Tens	$\overline{\hspace{1cm}}$ Ones	$\overline{\hspace{1cm}}$ R
	Equal Share	Equal Share	Equal Share	Remainder

$\underbrace{\hspace{10em}}$
 Quotient

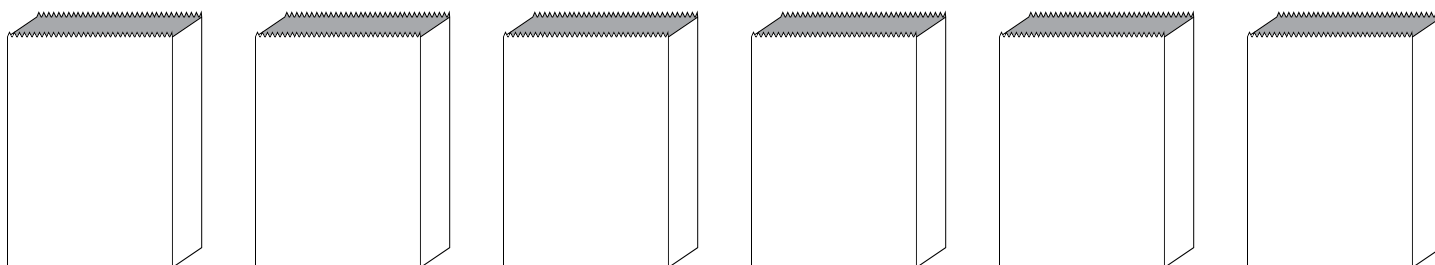
Use the base-10 picture of hundreds, tens, and ones to fill in the blanks and solve.

1.) 184 candies or 



<u> </u>		÷	<u> </u>	=	<u> </u>	<u> </u>	R <u> </u>
Tens	Ones		Divisor		Tens	Ones	Remainder
					Equal	Equal	
					Share	Share	
⎵					⎵		
<u> </u>					<u> </u>		
Dividend					Quotient		

2.) 743 candies



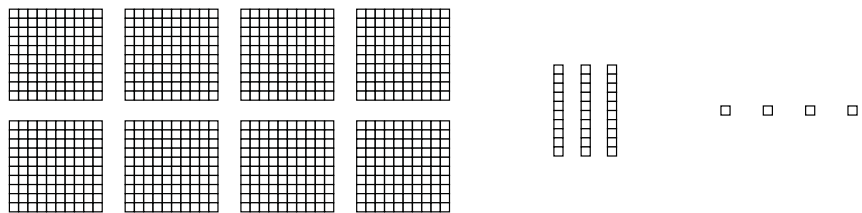
_____	_____	_____	÷	_____	=	_____	_____	_____	R _____
Hundreds	Tens	Ones		Divisor		Hundreds	Tens	Ones	Remainder
						Equal Share	Equal Share	Equal Share	
Dividend						Quotient			

Draw a base-10 picture to solve.

- 3.) Peter was helping out at his uncle's store. He was given 4 piñatas and 895 pieces of candy and prizes. The piñatas cost \$24 each. Peter's uncle told him to fill each piñata with the same amount of candy and prizes. How many pieces of candy and prizes will Peter put in each piñata?

_____ ÷ _____ = _____ R _____
 Dividend Divisor Quotient Remainder

1.)



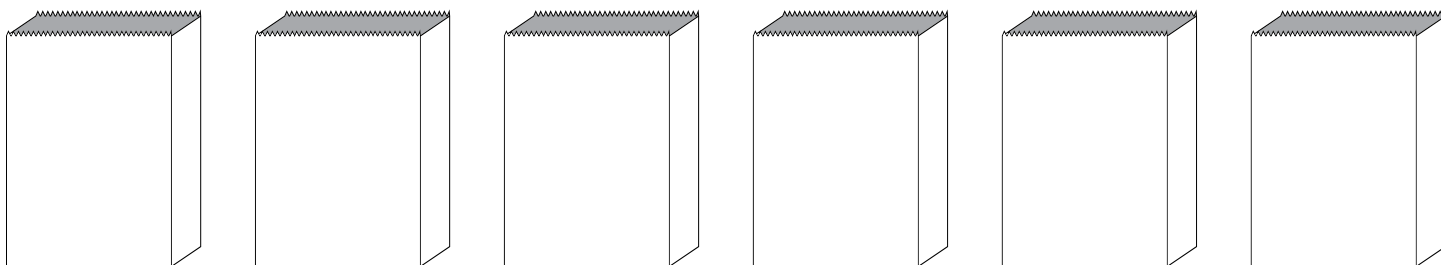
How many groups of 1? _____

Expanded Form

2.) Write another way to break apart the number. _____

Use the base-10 picture of hundreds, tens, and ones to fill in the blanks and solve.

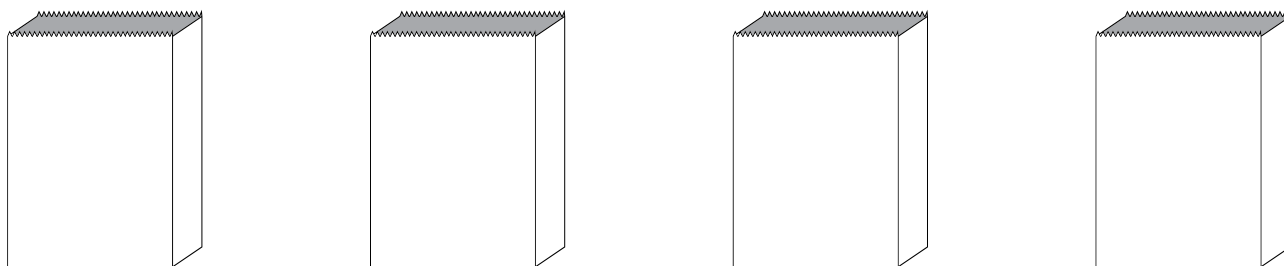
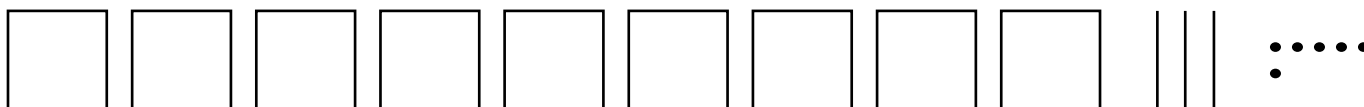
3.) 247 gems or 



$$\begin{array}{ccccccc}
 \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & \div & \underline{\hspace{1cm}} & = & \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & R \underline{\hspace{1cm}} \\
 \text{Tens} & \text{Ones} & & \text{Divisor} & & \text{Tens} & \text{Ones} & \text{Remainder} \\
 & & & & & \text{Equal} & \text{Equal} & \\
 & & & & & \text{Share} & \text{Share} & \\
 \underbrace{\hspace{10cm}} & & & & & \underbrace{\hspace{10cm}} & & \\
 \text{Dividend} & & & & & \text{Quotient} & &
 \end{array}$$

Use the base-10 picture of hundreds, tens, and ones to fill in the blanks and solve.

4.) 936 gems or



_____			÷	_____	=	_____	_____	_____	R _____
Hundreds	Tens	Ones		Divisor		Hundreds	Tens	Ones	Remainder
						Equal Share	Equal Share	Equal Share	
⏟						⏟			
Dividend						Quotient			

Choose the correct answer.

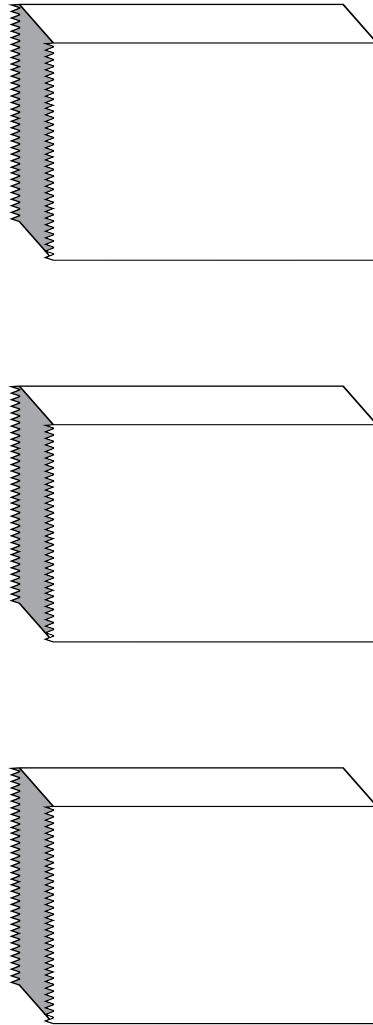
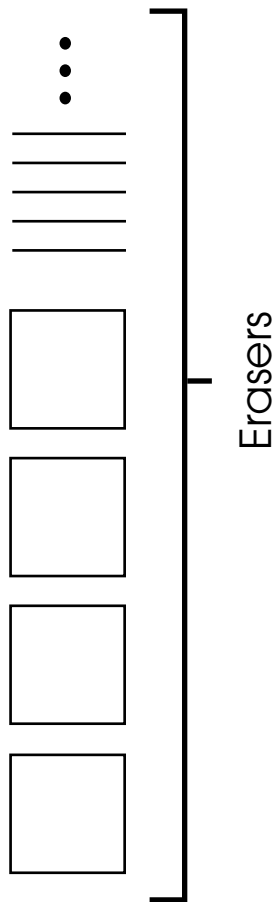
5.) Mariel collected shells on the beach. She wanted to fill 3 baskets with shells to give to her sisters. Mariel collected 128 shells in all. Which equation is correct for how Mariel should divide her shells equally into 3 baskets?

A $128 \div 3 = 42 \text{ R } 2$

B $128 \div 3 = 384$

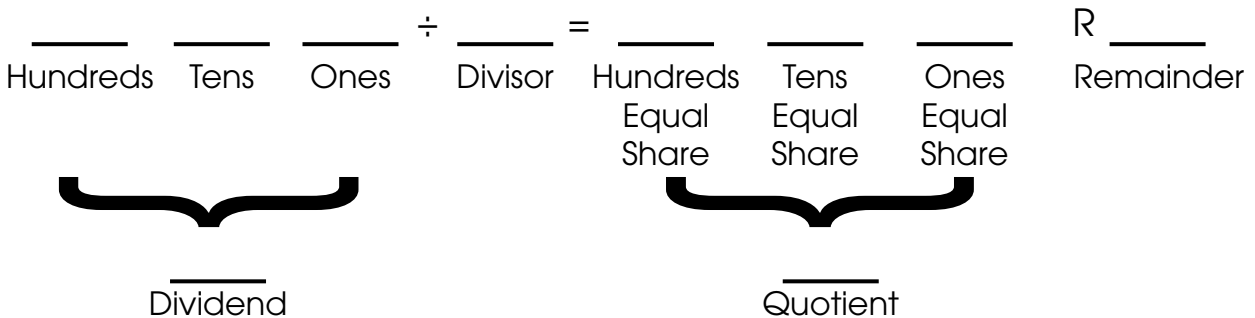
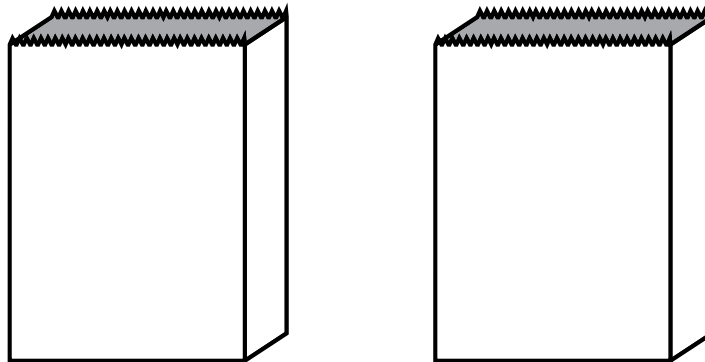
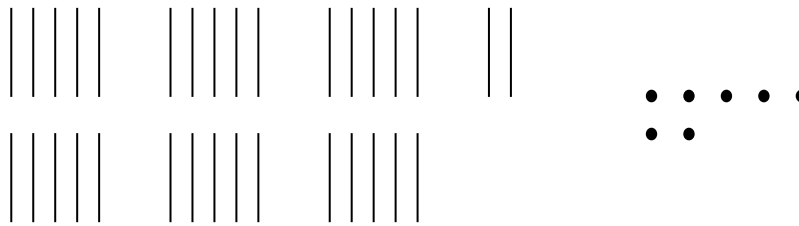
C $128 \times 3 = 384$

D $3 \div 128 = 42 \text{ R } 2$

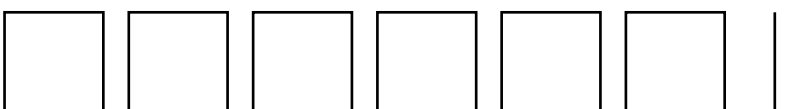


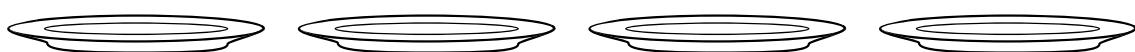
Hundreds Tens Ones } Dividend	÷	Divisor	=	Hundreds Tens Ones } Quotient	R	Remainder
--	---	---------------------------------	---	--	---	-----------------------------------

Donovan was given the division problem $327 \div 2$. He decided to draw a base-10 picture to help solve the problem. Is this the most efficient way to solve this problem?



Use the base-10 picture to fill in the blanks and solve.

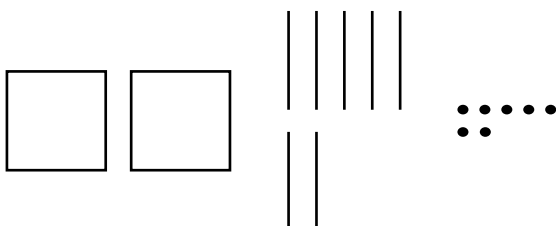
1.) 

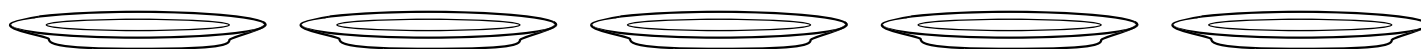


_____	_____	_____	÷	_____	=	_____	_____	_____	R _____
Hundreds	Tens	Ones		Divisor		Hundreds	Tens	Ones	Remainder
						Equal Share	Equal Share	Equal Share	

Dividend Quotient

2.) 



_____	_____	÷	_____	=	_____	_____	R _____
Tens	Ones		Divisor		Tens	Ones	Remainder
					Equal Share	Equal Share	

Dividend Quotient

Draw a base-10 picture to solve.

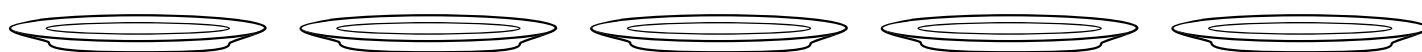
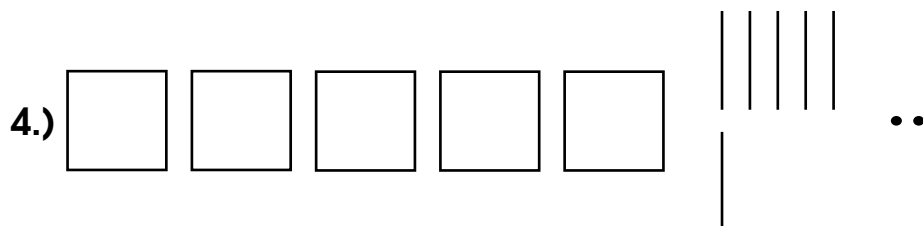
- 3.)** There were a total of 495 fans at the 3 play-off games. If the same number of fans attend each game, how many fans attended the first game?

What is the problem asking you to find?

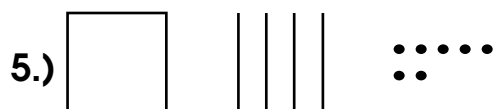
Expanded Form

$$26 \times 84 = \underline{\hspace{2cm}}$$

Use the base-10 picture to fill in the blanks and solve.



<u> </u>	<u> </u>	<u> </u>	÷	<u> </u>	=	<u> </u>	<u> </u>	<u> </u>	R <u> </u>
Hundreds	Tens	Ones		Divisor		Hundreds	Tens	Ones	Remainder
						Equal Share	Equal Share	Equal Share	
⏟						⏟			
Dividend						Quotient			



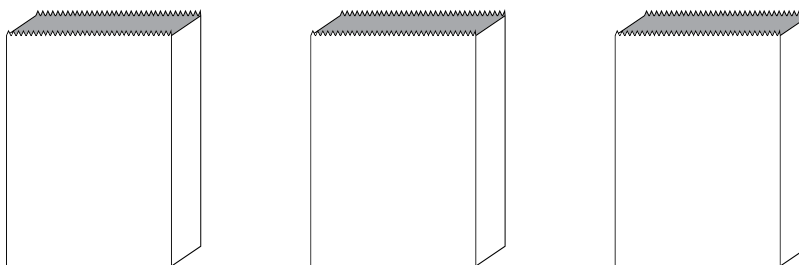
<u> </u>	<u> </u>	÷	<u> </u>	=	<u> </u>	<u> </u>	R <u> </u>
Tens	Ones		Divisor		Tens	Ones	Remainder
					Equal Share	Equal Share	
⏟					⏟		
Dividend					Quotient		

Use the base-10 picture to fill in the blanks and solve.

6.)

--	--	--	--	--	--

 ..



_____	_____	_____	$\div$	_____	=	_____	_____	_____	R _____
Hundreds	Tens	Ones		Divisor		Hundreds	Tens	Ones	Remainder
						Equal Share	Equal Share	Equal Share	
Dividend				Quotient					

Estimate the answer to the problems below.

1.) 39×6
 $\downarrow \quad \quad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

2.) 51×59
 $\downarrow \quad \quad \downarrow$
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

3.) $55 \div 9$ or $n \times \underline{\quad} = \underline{\quad}$

Multiples of 9: _____

Estimation: $\underline{\quad} \div 9 =$

$\underline{\quad} \div 9 =$

$55 \div 9 \approx \underline{\quad}$

4.) $321 \div 7$ or $n \times \underline{\quad} = \underline{\quad}$

Multiples of 7: _____

Estimation: $\underline{\quad} \div 7 =$

$\underline{\quad} \div 7 =$

$312 \div 7 \approx \underline{\quad}$

- 1.) The Bulldogs basketball team scored 103 points at Thursday night's game. Most of the points scored were 2-point shots, only a few 1-point penalty shots were made, and the team made no 3-point shots that night. Estimate about how many 2-point shots the team could have made during the game.

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

- 2.) David Chapmen, the Pirates' best shooting guard, played amazingly in the basketball game last night. He made 17 3-point shots in one game. What were the total points David scored from his 3-point shots?

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

- 1.) The Wildcats football team scored 24 points at their last game. The team scored touchdowns worth 7 points and field goals worth 3 points each. What is the highest number of touchdowns the team could have made?

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

- 2.) The Mighty Mustangs scored 5 touchdowns at their last football game. Each touchdown earned the team 7 points. What was the total score for the Mustangs at the end of the game?

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

- 3.)** For the baseball playoffs, 293 fans attended the first night, 302 fans attended the second night, 285 fans attended the third night, and 317 fans the fourth night. About how many fans attended the first 4 games during the playoffs?

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

- 4.)** At the baseball playoff games 682 hotdogs were sold. If about the same number of hotdogs were sold at each of the 7 games, about how many hotdogs were sold per game?

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

Interview Questions

- 1.) What do you think the question is asking you to find?

- 2.) Which method did you use to solve? Why?

- 3.) What are the strategy steps you followed?

- 4.) How did you estimate to check that your answer was reasonable?

- 5.) Do you think you answered the original question? Explain why you think so.

- 1.) A marathon runner ran a 26-mile race. If she kept a pace of about 8 minutes for every mile, about how many minutes did it take her to finish the marathon?

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?

- 2.) If a runner finished a marathon in 238 minutes, about how many hours was the runner running in the race? (Hint: remember 60 minutes = 1 hour)

Step 1.) What is the question asking you to find?	Step 2.) Which method will you use to solve?
Step 3.) How do you show your work?	Step 4.) Does your answer make sense?