EUREKA MATH PUSD

A Story of Units

Pleasanton UNIFIED SCHOOL DISTRICT Mathematics Curriculum

Grade 4 • MODULE 3

Multi-Digit Multiplication and Division

PROBLEM SETS

Video tutorials: http://embarc.online

Info for parents: http://bit.ly/pusdmath

Version 3

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Multi-Digit Multiplication and Division

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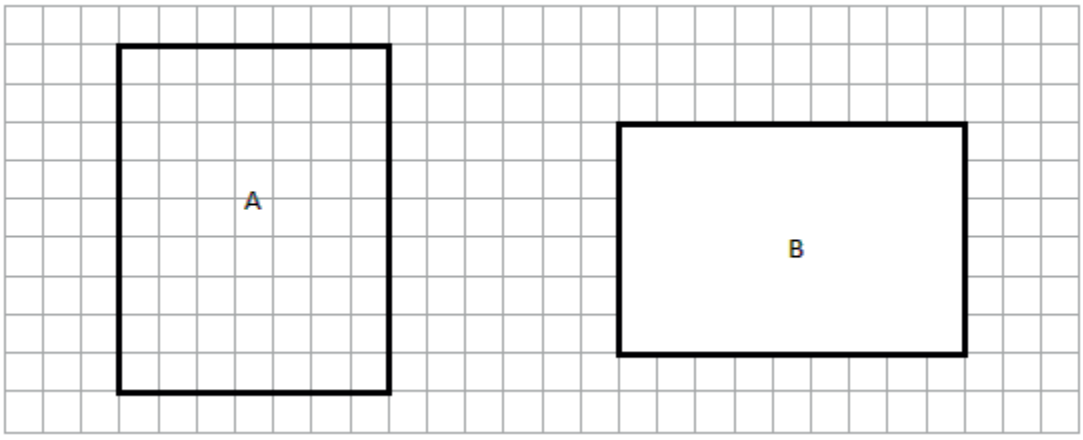
Name _____ Date _____

1. Determine the perimeter and area of rectangles A and B.

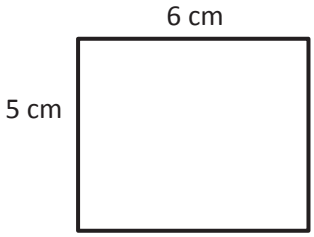


a. A = _____ A = _____

b. P = _____ P = _____

2. Determine the perimeter and area of each rectangle.

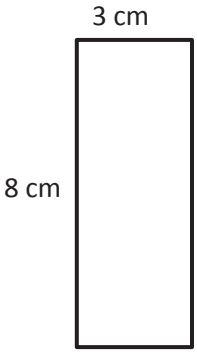
a.



P = _____

A = _____

b.

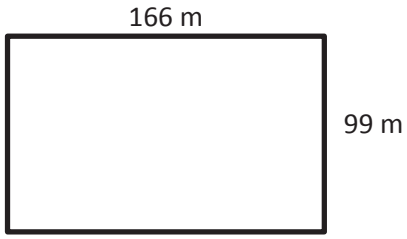


P = _____

A = _____

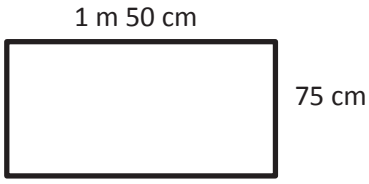
3. Determine the perimeter of each rectangle.

a.



P = _____

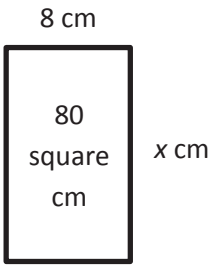
b.



P = _____

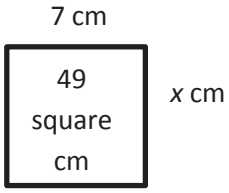
4. Given the rectangle's area, find the unknown side length.

a.



x = _____

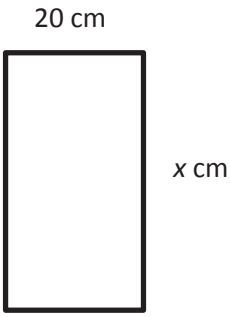
b.



x = _____

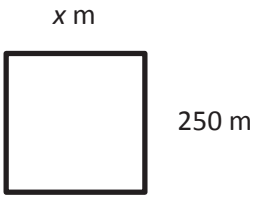
5. Given the rectangle's perimeter, find the unknown side length.

a. P = 120 cm



x = _____

b. P = 1,000 m

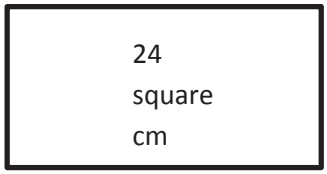


x = _____

6. Each of the following rectangles has whole number side lengths. Given the area and perimeter, find the length and width.

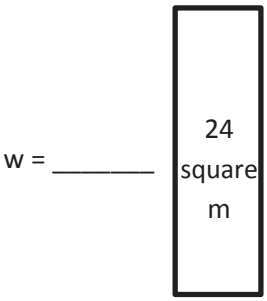
a. P = 20 cm

l = _____



w = _____

b. P = 28 m



l = _____

Name _____ Date _____

1. A rectangular porch is 4 feet wide. It is 3 times as long as it is wide.

   a. Label the diagram with the dimensions of the porch.

   b. Find the perimeter of the porch.

2. A narrow rectangular banner is 5 inches wide. It is 6 times as long as it is wide.

   a. Draw a diagram of the banner, and label its dimensions.

   b. Find the perimeter and area of the banner.

3. The area of a rectangle is 42 square centimeters. Its length is 7 centimeters.

   a. What is the width of the rectangle?

   b. Charlie wants to draw a second rectangle that is the same length but is 3 times as wide. Draw and label Charlie's second rectangle.

   c. What is the perimeter of Charlie's second rectangle?

4. The area of Betsy's rectangular sandbox is 20 square feet. The longer side measures 5 feet. The sandbox at the park is twice as long and twice as wide as Betsy's.

   a. Draw and label a diagram of Betsy's sandbox. What is its perimeter?

   b. Draw and label a diagram of the sandbox at the park. What is its perimeter?

   c. What is the relationship between the two perimeters?

   d. Find the area of the park's sandbox using the formula $A = l \times w$.

e. The sandbox at the park has an area that is how many times that of Betsy's sandbox?

f. Compare how the perimeter changed with how the area changed between the two sandboxes. Explain what you notice using words, pictures, or numbers.

Name _____ Date _____

Solve the following problems. Use pictures, numbers, or words to show your work.

1. The rectangular projection screen in the school auditorium is 5 times as long and 5 times as wide as the rectangular screen in the library. The screen in the library is 4 feet long with a perimeter of 14 feet. What is the perimeter of the screen in the auditorium?

2. The width of David's rectangular tent is 5 feet. The length is twice the width. David's rectangular air mattress measures 3 feet by 6 feet. If David puts the air mattress in the tent, how many square feet of floor space will be available for the rest of his things?

3. Jackson's rectangular bedroom has an area of 90 square feet. The area of his bedroom is 9 times that of his rectangular closet. If the closet is 2 feet wide, what is its length?

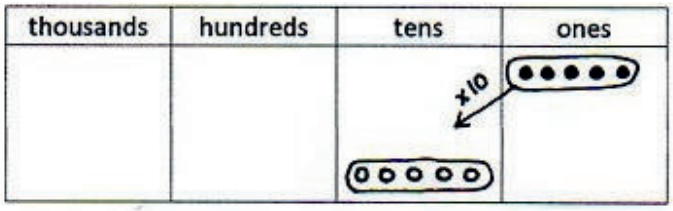
4. The length of a rectangular deck is 4 times its width. If the deck's perimeter is 30 feet, what is the deck's area?

Name _____ Date _____

Example:

5 × 10 = 50

5 ones × 10 = 5 tens



Draw place value disks and arrows as shown to represent each product.

1. 5 × 100 = _____

   5 × 10 × 10 = _____

   5 ones × 100 = ____ _____

thousands	hundreds	tens	ones

2. 5 × 1,000 = _____

   5 × 10 × 10 × 10 = _____

   5 ones × 1,000 = ____ _____

thousands	hundreds	tens	ones

3. Fill in the blanks in the following equations.

   a. 6 × 10 = _____ b. _____ × 6 = 600 c. 6,000 = _____ × 1,000

   d. 10 × 4 = _____ e. 4 × _____ = 400 f. _____ × 4 = 4,000

   g. 1,000 × 9 = _____ h. _____ = 10 × 9 i. 900 = _____ × 100

Draw place value disks and arrows to represent each product.

4. 12 × 10 = _____

   (1 ten 2 ones) × 10 = _____

thousands	hundreds	tens	ones

5. 18 × 100 = _____

   18 × 10 × 10 = _____

   (1 ten 8 ones) × 100 = _____

thousands	hundreds	tens	ones

6. 25 × 1,000 = _____

   25 × 10 × 10 × 10 = _____

   (2 tens 5 ones) × 1,000 =

   _____

ten thousands	thousands	hundreds	tens	ones

Decompose each multiple of 10, 100, or 1,000 before multiplying.

7. 3 × 40 = 3 × 4 × _____

   = 12 × _____

   = _____

8. 3 × 200 = 3 × _____ × _____

   = _____ × _____

   = _____

9. 4 × 4,000 = _____ × _____× _____

   = _____ × _____

   = _____

10. 5 × 4,000 = _____ × _____ × _____

    = _____ × _____

    = _____

Name _____ Date _____

Draw place value disks to represent the value of the following expressions.

1. 2 × 3 = _____

   2 times _____ ones is _____ ones.

thousands	hundreds	tens	ones

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

2. 2 × 30 = _____

   2 times _____ tens is _____ .

thousands	hundreds	tens	ones

$$\begin{array}{r} 30 \\ \times \quad 2 \\ \hline \end{array}$$

3. 2 × 300 = _____

   2 times _____ is _____.

thousands	hundreds	tens	ones

$$\begin{array}{r} 300 \\ \times \quad 2 \\ \hline \end{array}$$

4. 2 × 3,000 = _____

   ____ times _____ is _____ .

thousands	hundreds	tens	ones

$$\begin{array}{r} 3,000 \\ \times \quad 2 \\ \hline \end{array}$$

5. Find the product.

a. 20 × 7	b. 3 × 60	c. 3 × 400	d. 2 × 800
e. 7 × 30	f. 60 × 6	g. 400 × 4	h. 4 × 8,000
i. 5 × 30	j. 5 × 60	k. 5 × 400	l. 8,000 × 5

6. Brianna buys 3 packs of balloons for a party. Each pack has 60 balloons. How many balloons does Brianna have?

7. Jordan has twenty times as many baseball cards as his brother. His brother has 9 cards. How many cards does Jordan have?

8. The aquarium has 30 times as many fish in one tank as Jacob has. The aquarium has 90 fish. How many fish does Jacob have?

Name _____ Date _____

Represent the following problem by drawing disks in the place value chart.

1. To solve 20 × 40, think

hundreds	tens	ones

(2 tens × 4) × 10 = _____

20 × (4 × 10) = _____

20 × 40 = _____

2. Draw an area model to represent 20 × 40.

2 tens × 4 tens = _____ _____

3. Draw an area model to represent 30 × 40.

3 tens × 4 tens = _____ _____

30 × 40 = _____

4. Draw an area model to represent 20 × 50.

2 tens × 5 tens = _____ _____

20 × 50 = _____

Rewrite each equation in unit form and solve.

5. 20 × 20 = _____

2 tens × 2 tens = _____ hundreds

6. 60 × 20 = _____

6 tens × 2 _____ = ____ hundreds

7. 70 × 20 = _____

_____ tens × _____ tens = 14 _____

8. 70 × 30 = _____

____ _____ × ____ _____ = _____ hundreds

9. If there are 40 seats per row, how many seats are in 90 rows?

10. One ticket to the symphony costs $50. How much money is collected if 80 tickets are sold?

Name _____ Date _____

1. Represent the following expressions with disks, regrouping as necessary, writing a matching expression, and recording the partial products vertically as shown below.

a. 1 × 43

tens	ones
	

$$\begin{array}{rcl} & 4\ 3 & \\ \times & 1 & \\ \hline & 3 & \rightarrow 1 \times 3 \text{ ones} \\ + & 4\ 0 & \rightarrow 1 \times 4 \text{ tens} \\ \hline & 4\ 3 & \end{array}$$

b. 2 × 43

tens	ones

c. 3 × 43

hundreds	tens	ones

d. 4 × 43

hundreds	tens	ones

2. Represent the following expressions with disks, regrouping as necessary. To the right, record the partial products vertically.

a. 2 × 36

hundreds	tens	ones

b. 3 × 61

hundreds	tens	ones

c. 4 × 84

hundreds	tens	ones

Name _____ Date _____

1. Represent the following expressions with disks, regrouping as necessary, writing a matching expression, and recording the partial products vertically as shown below.

   a. 1 × 213

hundreds	tens	ones

$$\begin{array}{r} 2\ 1\ 3 \\ \times\quad\quad 1 \\ \hline \\ + \\ \hline \end{array}$$

→ 1 × 3 ones
→ 1 × 1 ten
→ 1 × 2 hundreds

1 × ___ hundreds + 1 × ___ ten + 1 × ___ ones

   b. 2 × 213

hundreds	tens	ones

   c. 3 × 214

hundreds	tens	ones

d. 3 × 1,254

thousands	hundreds	tens	ones

2. Represent the following expressions with disks, using either method shown during class, regrouping as necessary. To the right, record the partial products vertically.
   a. 3 × 212

   b. 2 × 4,036

c. $3 \times 2{,}546$

d. $3 \times 1{,}407$

3. Every day at the bagel factory, Cyndi makes 5 different kinds of bagels. If she makes 144 of each kind, what is the total number of bagels that she makes?

Name _____ Date _____

1. Solve using each method.

Partial Products	Standard Algorithm
a. 34 × 4	34 × 4

Partial Products	Standard Algorithm
b. 224 × 3	224 × 3

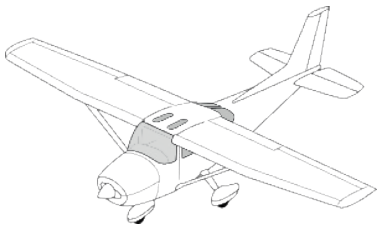
2. Solve. Use the standard algorithm.

a. 251 × 3	b. 135 × 6	c. 304 × 9
d. 405 × 4	e. 316 × 5	f. 392 × 6

3. The product of 7 and 86 is _____.

4. 9 times as many as 457 is _____.

5. Jashawn wants to make 5 airplane propellers.
He needs 18 centimeters of wood for each propeller.
How many centimeters of wood will he use?



6. One game system costs $238. How much will 4 game systems cost?

7. A small bag of chips weighs 48 grams. A large bag of chips weighs three times as much as the small bag. How much will 7 large bags of chips weigh?

Name _____ Date _____

1. Solve using the standard algorithm.

a. 3 × 42	b. 6 × 42
c. 6 × 431	d. 3 × 431
e. 3 × 6,212	f. 3 × 3,106
g. 4 × 4,309	h. 4 × 8,618

2. There are 365 days in a common year. How many days are in 3 common years?

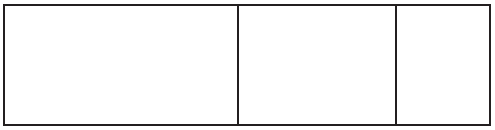
3. The length of one side of a square city block is 462 meters. What is the perimeter of the block?

4. Jake ran 2 miles. Jesse ran 4 times as far. There are 5,280 feet in a mile. How many feet did Jesse run?

Name _____ Date _____

1. Solve the following expressions using the standard algorithm, the partial products method, and the area model.

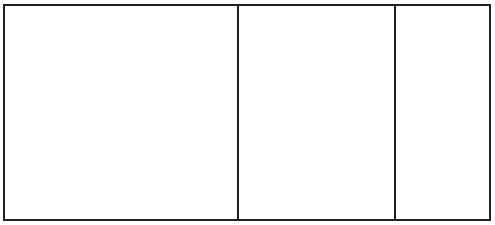
a. 4 2 5 × 4



4 (400 + 20 + 5)

(4 × _____) + (4 × _____) + (4 × _____)

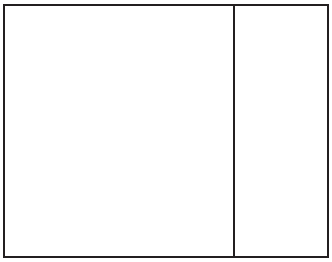
b. 5 3 4 × 7



7 (____ + ____ + ____)

(__ × _____) + (__ × _____) + (__ × ____)

c. 2 0 9 × 8



__ (____ + ____)

(__ × _____) + (__ × _____)

2. Solve using the partial products method.

   Cayla's school has 258 students. Janet's school has 3 times as many students as Cayla's. How many students are in Janet's school?

3. Model with a tape diagram and solve.

   4 times as much as 467

Solve using the standard algorithm, the area model, the distributive property, or the partial products method.

4. 5,131 × 7

5. 3 times as many as 2,805

6. A restaurant sells 1,725 pounds of spaghetti and 925 pounds of linguini every month. After 9 months, how many pounds of pasta does the restaurant sell?

Name _____ Date _____

Use the RDW process to solve the following problems.

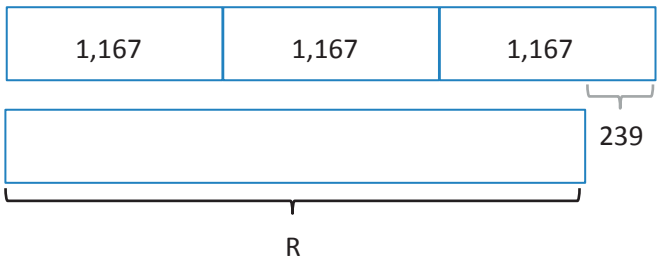
1. The table shows the cost of party favors. Each party guest receives a bag with 1 balloon, 1 lollipop, and 1 bracelet. What is the total cost for 9 guests?

Item	Cost
1 balloon	26¢
1 lollipop	14¢
1 bracelet	33¢

2. The Turner family uses 548 liters of water per day. The Hill family uses 3 times as much water per day. How much water does the Hill family use per week?

3. Jayden has 347 marbles. Elvis has 4 times as many as Jayden. Presley has 799 fewer than Elvis. How many marbles does Presley have?

4. a. Write an equation that would allow someone to find the value of R.



b. Write your own word problem to correspond to the tape diagram, and then solve.

Name _____ Date _____

Solve using the RDW process.

1. Over the summer, Kate earned $180 each week for 7 weeks. Of that money, she spent $375 on a new computer and $137 on new clothes. How much money did she have left?

2. Sylvia weighed 8 pounds when she was born. By her first birthday, her weight had tripled. By her second birthday, she had gained 12 more pounds. At that time, Sylvia's father weighed 5 times as much as she did. What was Sylvia and her dad's combined weight?

3. Three boxes weighing 128 pounds each and one box weighing 254 pounds were loaded onto the back of an empty truck. A crate of apples was then loaded onto the same truck. If the total weight loaded onto the truck was 2,000 pounds, how much did the crate of apples weigh?

4. In one month, Charlie read 814 pages. In the same month, his mom read 4 times as many pages as Charlie, and that was 143 pages more than Charlie's dad read. What was the total number of pages read by Charlie and his parents?

Name _____ Date _____

Use the RDW process to solve the following problems.

1. There are 19 identical socks. How many pairs of socks are there? Will there be any socks without a match? If so, how many?

2. If it takes 8 inches of ribbon to make a bow, how many bows can be made from 3 feet of ribbon (1 foot = 12 inches)? Will any ribbon be left over? If so, how much?

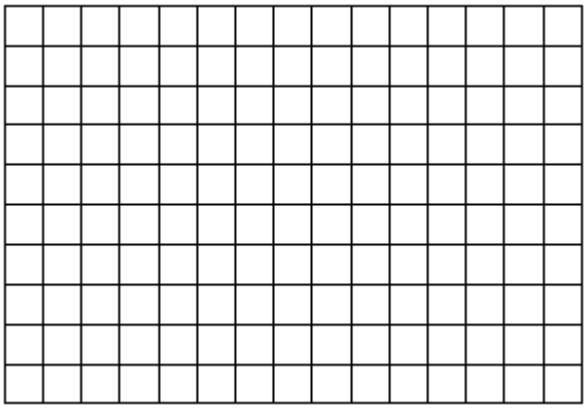
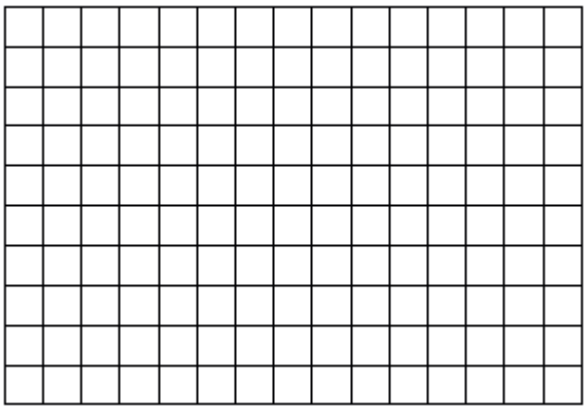
3. The library has 27 chairs and 5 tables. If the same number of chairs is placed at each table, how many chairs can be placed at each table? Will there be any extra chairs? If so, how many?

4. The baker has 42 kilograms of flour. She uses 8 kilograms each day. After how many days will she need to buy more flour?

5. Caleb has 76 apples. He wants to bake as many pies as he can. If it takes 8 apples to make each pie, how many apples will he use? How many apples will not be used?

6. Forty-five people are going to the beach. Seven people can ride in each van. How many vans will be required to get everyone to the beach?

Name _____ Date _____

Show division using an array.	Show division using an area model.
1. 18 ÷ 6 Quotient = _____ Remainder = _____	 Can you show 18 ÷ 6 with one rectangle? _____
2. 19 ÷ 6 Quotient = _____ Remainder = _____	 Can you show 19 ÷ 6 with one rectangle? _____ Explain how you showed the remainder:

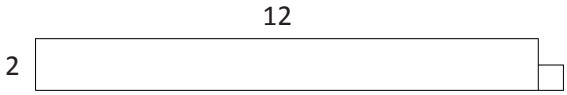
Solve using an array and an area model. The first one is done for you.

Example: 25 ÷ 2

a. 

Quotient = 12 Remainder = 1

b.



3. 29 ÷ 3

a. b.

4. 22 ÷ 5

a. b.

5. 43 ÷ 4

a. b.

6. 59 ÷ 7

a. b.

Name _____ Date _____

Show the division using disks. Relate your work on the place value chart to long division. Check your quotient and remainder by using multiplication and addition.

1. 7 ÷ 2

Ones

2 ⟌ 7

quotient = _____

remainder = _____

Check Your Work

3

× 2

2. 27 ÷ 2

Tens	Ones

2 ⟌ 27

quotient = _____

remainder = _____

Check Your Work

3. 8 ÷ 3

Ones

3 ⟌ 8

quotient = _____

remainder = _____

Check Your Work

4. 38 ÷ 3

Tens	Ones

3 ⟌ 3 8

quotient = _____

remainder = _____

Check Your Work

5. 6 ÷ 4

Ones

4 ⟌ 6

quotient = _____

remainder = _____

Check Your Work

6. 86 ÷ 4

Tens	Ones

4 ⟌ 86

quotient = _____

remainder = _____

Check Your Work

Name _____ Date _____

Show the division using disks. Relate your model to long division. Check your quotient and remainder by using multiplication and addition.

1. 5 ÷ 2

Ones

2 ⟌ 5

quotient = _____

remainder = _____

Check Your Work

2

× 2

2. 50 ÷ 2

Tens	Ones

2 ⟌ 5 0

quotient = _____

remainder = _____

Check Your Work

3. 7 ÷ 3

Ones

3 ⟌ 7

quotient = _____

remainder = _____

Check Your Work

4. 75 ÷ 3

Tens	Ones

3 ⟌ 7 5

quotient = _____

remainder = _____

Check Your Work

5. 9 ÷ 4

Ones

4 | 9

quotient = _____

remainder = _____

Check Your Work

6. 92 ÷ 4

Tens	Ones

4 | 9 2

Check Your Work

quotient = _____

remainder = _____

Name _____ Date _____

Solve using the standard algorithm. Check your quotient and remainder by using multiplication and addition.

1. 46 ÷ 2	2. 96 ÷ 3
3. 85 ÷ 5	4. 52 ÷ 4
5. 53 ÷ 3	6. 95 ÷ 4

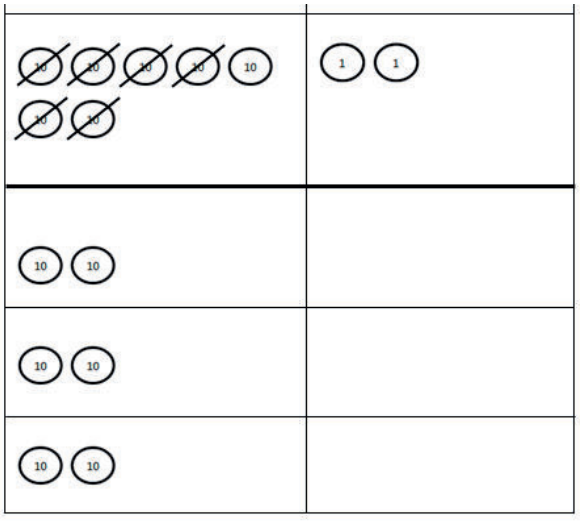
7. 89 ÷ 6	8. 96 ÷ 6
9. 60 ÷ 3	10. 60 ÷ 4
11. 95 ÷ 8	12. 95 ÷ 7

Name _____ Date _____

1. When you divide 94 by 3, there is a remainder of 1. Model this problem with place value disks. In the place value disk model, how did you show the remainder?

2. Cayman says that 94 ÷ 3 is 30 with a remainder of 4. He reasons this is correct because (3 × 30) + 4 = 94. What mistake has Cayman made? Explain how he can correct his work.

3. The place value disk model is showing 72 ÷ 3. Complete the model. Explain what happens to the 1 ten that is remaining in the tens column.



4. Two friends evenly share 56 dollars.

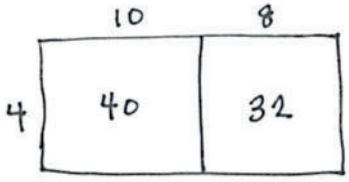
   a. They have 5 ten-dollar bills and 6 one-dollar bills. Draw a picture to show how the bills will be shared. Will they have to make change at any stage?

   b. Explain how they share the money evenly.

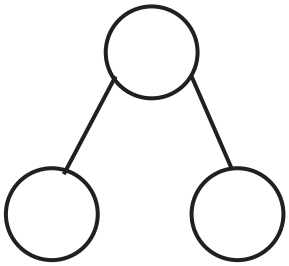
Name _____ Date _____

1. Alfonso solved a division problem by drawing an area model.

   a. Look at the area model. What division problem did Alfonso solve?



   b. Show a number bond to represent Alfonso's area model. Start with the total, and then show how the total is split into two parts. Below the two parts, represent the total length using the distributive property, and then solve.



(___÷___) + (___÷___)

= _____ + _____

= _____

2. Solve 45 ÷ 3 using an area model. Draw a number bond, and use the distributive property to solve for the unknown length.

3. Solve 64 ÷ 4 using an area model. Draw a number bond to show how you partitioned the area, and represent the division with a written method.

4. Solve 92 ÷ 4 using an area model. Explain, using words, pictures, or numbers, the connection of the distributive property to the area model.

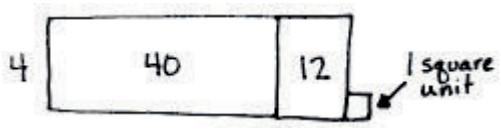
5. Solve 72 ÷ 6 using an area model and the standard algorithm.

Name _____ Date _____

1. Solve 37 ÷ 2 using an area model. Use long division and the distributive property to record your work.

2. Solve 76 ÷ 3 using an area model. Use long division and the distributive property to record your work.

3. Carolina solved the following division problem by drawing an area model.



   a. What division problem did she solve?

   b. Show how Carolina's model can be represented using the distributive property.

Solve the following problems using the area model. Support the area model with long division or the distributive property.

4. 48 ÷ 3	5. 49 ÷ 3
6. 56 ÷ 4	7. 58 ÷ 4
8. 66 ÷ 5	9. 79 ÷ 3

10. Seventy-three students are divided into groups of 6 students each. How many groups of 6 students are there? How many students will not be in a group of 6?

Name _____ Date _____

1. Record the factors of the given numbers as multiplication sentences and as a list in order from least to greatest. Classify each as prime (P) or composite (C). The first problem is done for you.

	Multiplication Sentences	Factors	P or C
a.	4 $1 \times 4 = 4$ $2 \times 2 = 4$	The factors of 4 are: 1, 2, 4	C
b.	6	The factors of 6 are:	
c.	7	The factors of 7 are:	
d.	9	The factors of 9 are:	
e.	12	The factors of 12 are:	
f.	13	The factors of 13 are:	
g.	15	The factors of 15 are:	
h.	16	The factors of 16 are:	
i.	18	The factors of 18 are:	
j.	19	The factors of 19 are:	
k.	21	The factors of 21 are:	
l.	24	The factors of 24 are:	

2. Find all factors for the following numbers, and classify each number as prime or composite. Explain your classification of each as prime or composite.

Factor Pairs for 25	

Factor Pairs for 28	

Factor Pairs for 29	

3. Bryan says all prime numbers are odd numbers.

   a. List all of the prime numbers less than 20 in numerical order.

   b. Use your list to show that Bryan's claim is false.

4. Sheila has 28 stickers to divide evenly among 3 friends. She thinks there will be no leftovers. Use what you know about factor pairs to explain if Sheila is correct.

Name _____ Date _____

1. Explain your thinking or use division to answer the following.

a. Is 2 a factor of 84?	b. Is 2 a factor of 83?
c. Is 3 a factor of 84?	d. Is 2 a factor of 92?
e. Is 6 a factor of 84?	f. Is 4 a factor of 92?
g. Is 5 a factor of 84?	h. Is 8 a factor of 92?

2. Use the associative property to find more factors of 24 and 36.

a. $24 = 12 \times 2$

$= (\_\_\_ \times 3) \times 2$

$= \_\_\_ \times (3 \times 2)$

$= \_\_\_ \times 6$

$= \_\_\_$

b. $36 = \_\_\_\_ \times 4$

$= (\_\_\_\_ \times 3) \times 4$

$= \_\_\_\_ \times (3 \times 4)$

$= \_\_\_\_ \times 12$

$= \_\_\_\_$

3. In class, we used the associative property to show that when 6 is a factor, then 2 and 3 are factors, because $6 = 2 \times 3$. Use the fact that $8 = 4 \times 2$ to show that 2 and 4 are factors of 56, 72, and 80.

$56 = 8 \times 7$ $72 = 8 \times 9$ $80 = 8 \times 10$

4. The first statement is false. The second statement is true. Explain why, using words, pictures, or numbers.

If a number has 2 and 4 as factors, then it has 8 as a factor.
If a number has 8 as a factor, then both 2 and 4 are factors.

Name _____ Date _____

1. For each of the following, time yourself for 1 minute. See how many multiples you can write.

   a. Write the multiples of 5 starting from 100.

   b. Write the multiples of 4 starting from 20.

   c. Write the multiples of 6 starting from 36.

2. List the numbers that have 24 as a multiple.

3. Use mental math, division, or the associative property to solve. (Use scratch paper if you like.)

   a. Is 12 a multiple of 4? _____ Is 4 a factor of 12? _____

   b. Is 42 a multiple of 8? _____ Is 8 a factor of 42? _____

   c. Is 84 a multiple of 6? _____ Is 6 a factor of 84? _____

4. Can a prime number be a multiple of any other number except itself? Explain why or why not.

5. Follow the directions below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

a. Circle in red the multiples of 2. When a number is a multiple of 2, what are the possible values for the ones digit?

b. Shade in green the multiples of 3. Choose one. What do you notice about the sum of the digits? Choose another. What do you notice about the sum of the digits?

c. Circle in blue the multiples of 5. When a number is a multiple of 5, what are the possible values for the ones digit?

d. Draw an X over the multiples of 10. What digit do all multiples of 10 have in common?

Name _____ Date _____

1. Follow the directions.

   Shade the number 1 red.

   a. Circle the first unmarked number.

   b. Cross off every multiple of that number except the one you circled. If it's already crossed off, skip it.

   c. Repeat Steps (a) and (b) until every number is either circled or crossed off.

   d. Shade every crossed out number in orange.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

2. a. List the circled numbers.

b. Why were the circled numbers not crossed off along the way?

c. Except for the number 1, what is similar about all of the numbers that were crossed off?

d. What is similar about all of the numbers that were circled?

Name _____ Date _____

1. Draw place value disks to represent the following problems. Rewrite each in unit form and solve.

   a. 6 ÷ 2 = _____

   (1) (1) (1) (1) (1) (1)

   6 ones ÷ 2 = _____ ones

   b. 60 ÷ 2 = _____

   6 tens ÷ 2 = _____

   c. 600 ÷ 2 = _____

   _____ ÷ 2 = _____

   d. 6,000 ÷ 2 = _____

   _____ ÷ 2 = _____

2. Draw place value disks to represent each problem. Rewrite each in unit form and solve.

   a. 12 ÷ 3 = _____

   12 ones ÷ 3 = _____ ones

   b. 120 ÷ 3 = _____

   _____ ÷ 3 = _____

   c. 1,200 ÷ 3 = _____

   _____ ÷ 3 = _____

3. Solve for the quotient. Rewrite each in unit form.

a. 800 ÷ 2 = 400 8 hundreds ÷ 2 = 4 hundreds	b. 600 ÷ 2 = _____	c. 800 ÷ 4 = _____	d. 900 ÷ 3 = _____
e. 300 ÷ 6 = _____ 30 tens ÷ 6 = ____ tens	f. 240 ÷ 4 = _____	g. 450 ÷ 5 = _____	h. 200 ÷ 5 = _____
i. 3,600 ÷ 4 = _____ 36 hundreds ÷ 4 = ____ hundreds	j. 2,400 ÷ 4 = _____	k. 2,400 ÷ 3 = _____	l. 4,000 ÷ 5 = _____

4. Some sand weighs 2,800 kilograms. It is divided equally among 4 trucks. How many kilograms of sand are in each truck?

5. Ivy has 5 times as many stickers as Adrian has. Ivy has 350 stickers. How many stickers does Adrian have?

6. An ice cream stand sold $1,600 worth of ice cream on Saturday, which was 4 times the amount sold on Friday. How much money did the ice cream stand collect on Friday?

Name _____ Date _____

1. Divide. Use place value disks to model each problem.

a. 324 ÷ 2

b. 344 ÷ 2

c. 483 ÷ 3

d. 549 ÷ 3

2. Model using place value disks and record using the algorithm.

a. 655 ÷ 5 Disks Algorithm
b. 726÷ 3 Disks Algorithm
c. 688 ÷ 4 Disks Algorithm

Name _____ Date _____

1. Divide. Check your work by multiplying. Draw disks on a place value chart as needed.

a. 574 ÷ 2

b. 861 ÷ 3

c. 354 ÷ 2

d. 354 ÷ 3

e. 873 ÷ 4

f. 591 ÷ 5

g. 275 ÷ 3

h. 459 ÷ 5

i. 678 ÷ 4

j. 955 ÷ 4

2. Zach filled 581 one-liter bottles with apple cider. He distributed the bottles to 4 stores. Each store received the same number of bottles. How many liter bottles did each of the stores receive? Were there any bottles left over? If so, how many?

Name _____ Date _____

1. Divide, and then check using multiplication.

a. 1,672 ÷ 4

b. 1,578 ÷ 4

c. 6,948 ÷ 2

d. 8,949 ÷ 4

e. 7,569 ÷ 2

f. 7,569 ÷ 3

g. 7,955 ÷ 5

h. 7,574 ÷ 5

i. 7,469 ÷ 3

j. 9,956 ÷ 4

2. There are twice as many cows as goats on a farm. All the cows and goats have a total of 1,116 legs. How many goats are there?

Name _____ Date _____

Divide. Check your solutions by multiplying.

1. 204 ÷ 4

2. 704 ÷ 3

3. 627 ÷ 3

4. 407 ÷ 2

5. 760 ÷ 4

6. 5,120 ÷ 4

7. 3,070 ÷ 5

8. 6,706 ÷ 5

9. 8,313 ÷ 4

10. 9,008 ÷ 3

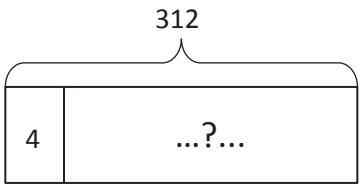
11. a. Find the quotient and remainder for 3,131 ÷ 3.

b. How could you change the digit in the ones place of the whole so that there would be no remainder? Explain how you determined your answer.

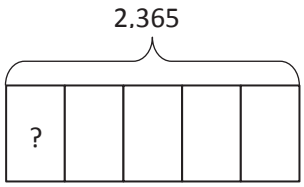
Name _____ Date _____

Draw a tape diagram and solve. The first two tape diagrams have been drawn for you. Identify if the group size or the number of groups is unknown.

1. Monique needs exactly 4 plates on each table for the banquet. If she has 312 plates, how many tables is she able to prepare?



2. 2,365 books were donated to an elementary school. If 5 classrooms shared the books equally, how many books did each class receive?



3. If 1,503 kilograms of rice was packed in sacks weighing 3 kilograms each, how many sacks were packed?

4. Rita made 5 batches of cookies. There was a total of 2,400 cookies. If each batch contained the same number of cookies, how many cookies were in 4 batches?

5. Every day, Sarah drives the same distance to work and back home. If Sarah drove 1,005 miles in 5 days, how far did Sarah drive in 3 days?

Name _____ Date _____

Solve the following problems. Draw tape diagrams to help you solve. If there is a remainder, shade in a small portion of the tape diagram to represent that portion of the whole.

1. A concert hall contains 8 sections of seats with the same number of seats in each section. If there are 248 seats, how many seats are in each section?

2. In one day, the bakery made 719 bagels. The bagels were divided into 9 equal shipments. A few bagels were left over and given to the baker. How many bagels did the baker get?

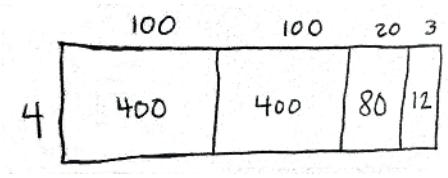
3. The sweet shop has 614 pieces of candy. They packed the candy into bags with 7 pieces in each bag. How many bags of candy did they fill? How many pieces of candy were left?

4. There were 904 children signed up for the relay race. If there were 6 children on each team, how many teams were made? The remaining children served as referees. How many children served as referees?

5. 1,188 kilograms of rice are divided into 7 sacks. How many kilograms of rice are in 6 sacks of rice? How many kilograms of rice remain?

Name _____ Date _____

1. Ursula solved the following division problem by drawing an area model.



a. What division problem did she solve?

b. Show a number bond to represent Ursula's area model, and represent the total length using the distributive property.

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2. a. Solve 960 ÷ 4 using the area model. There is no remainder in this problem.

b. Draw a number bond and use the long division algorithm to record your work from Part (a).

3. a. Draw an area model to solve 774 ÷ 3.

b. Draw a number bond to represent this problem.

c. Record your work using the long division algorithm.

4. a. Draw an area model to solve 1,584 ÷ 2.

b. Draw a number bond to represent this problem.

c. Record your work using the long division algorithm.

Name _____ Date _____

1. Use the associative property to rewrite each expression. Solve using disks, and then complete the number sentences.

a. 30 × 24

= (____ × 10) × 24

= ____ × (10 × 24)

= _____

hundreds	tens	ones

b. 40 × 43

= (4 × 10) × _____

= 4 × (10 × ___)

= _____

thousands	hundreds	tens	ones

c. 30 × 37

= (3 × ____) × _____

= 3 × (10 × _____)

= _____

thousands	hundreds	tens	ones

2. Use the associative property and place value disks to solve.
   a. 20 × 27

   b. 40 × 31

3. Use the associative property without place value disks to solve.
   a. 40 × 34

   b. 50 × 43

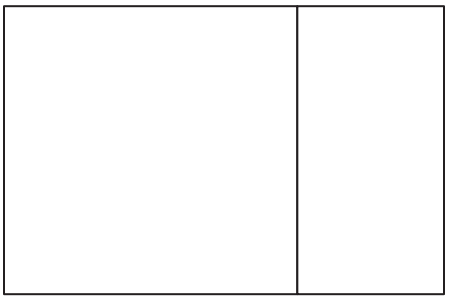
4. Use the distributive property to solve the following problems. Distribute the second factor.
   a. 40 × 34

   b. 60 × 25

Name _____ Date _____

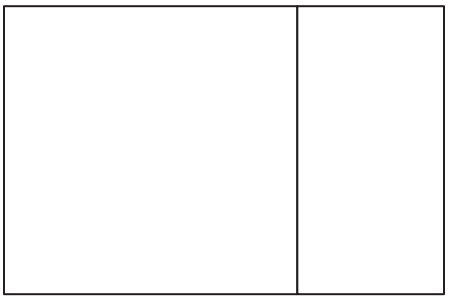
Use an area model to represent the following expressions. Then, record the partial products and solve.

1. 20 × 22



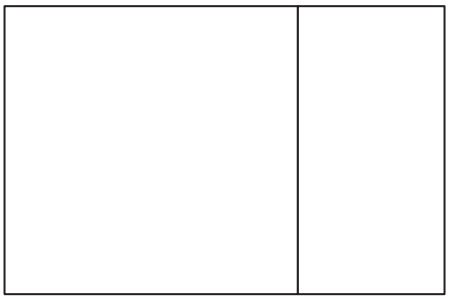
$$\begin{array}{r} 2\ 2 \\ \times\ 2\ 0 \\ \hline \\ + \\ \hline \end{array}$$

2. 50 × 41



$$\begin{array}{r} 4\ 1 \\ \times\ 5\ 0 \\ \hline \\ + \\ \hline \end{array}$$

3. 60 × 73



$$\begin{array}{r} 7\ 3 \\ \times\ 6\ 0 \\ \hline \\ + \\ \hline \end{array}$$

Draw an area model to represent the following expressions. Then, record the partial products vertically and solve.

4. 80 × 32

5. 70 × 54

Visualize the area model, and solve the following expressions numerically.

6. 30 × 68

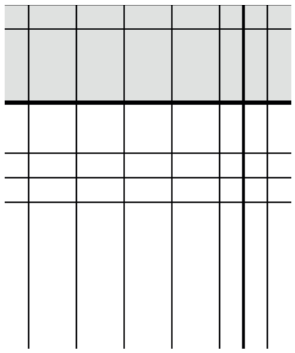
7. 60 × 34

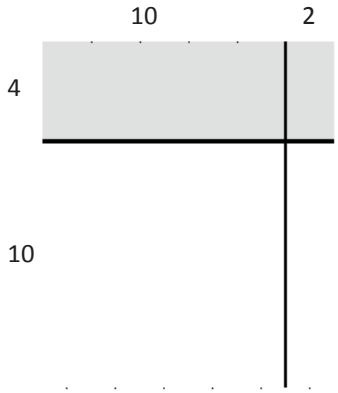
8. 40 × 55

9. 80 × 55

Name _____ Date _____

1. a. In each of the two models pictured below, write the expressions that determine the area of each of the four smaller rectangles.



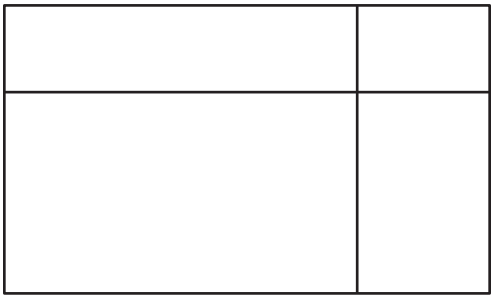


b. Using the distributive property, rewrite the area of the large rectangle as the sum of the areas of the four smaller rectangles. Express first in number form, and then read in unit form.

$14 \times 12 = (4 \times \_\_\_\_\_) + (4 \times \_\_\_\_\_) + (10 \times \_\_\_\_\_) + (10 \times \_\_\_\_\_)$

2. Use an area model to represent the following expression. Record the partial products and solve.

14×22



$$\begin{array}{r} 2\ 2 \\ \times\ 1\ 4 \\ \hline \\ \hline \\ \hline \\ \hline \\ + \\ \hline \end{array}$$

Draw an area model to represent the following expressions. Record the partial products vertically and solve.

3. 25 × 32

4. 35 × 42

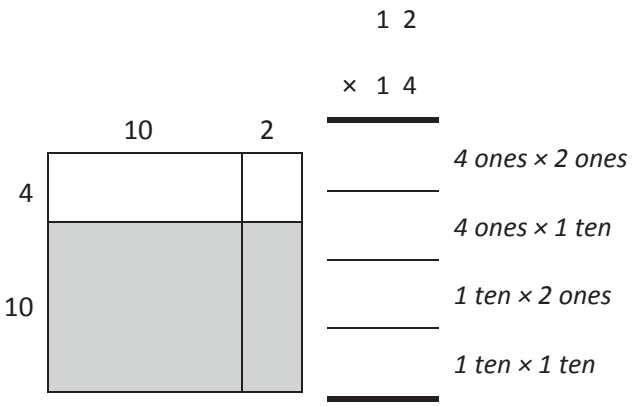
Visualize the area model and solve the following numerically using four partial products. (You may sketch an area model if it helps.)

5. 42 × 11

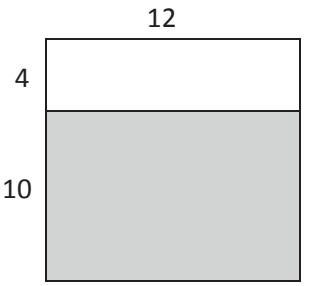
6. 46 × 11

Name _____ Date _____

1. Solve 14 × 12 using 4 partial products and 2 partial products. Remember to think in terms of units as you solve. Write an expression to find the area of each smaller rectangle in the area model.

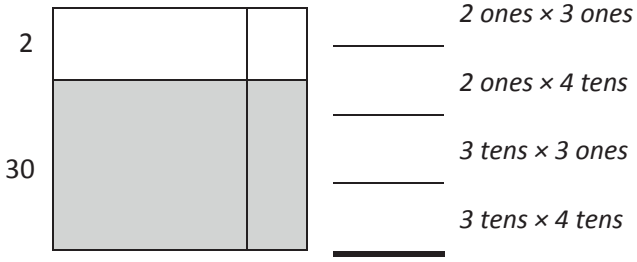


1 2
× 1 4
_____ *4 ones × 2 ones*
_____ *4 ones × 1 ten*
_____ *1 ten × 2 ones*
_____ *1 ten × 1 ten*

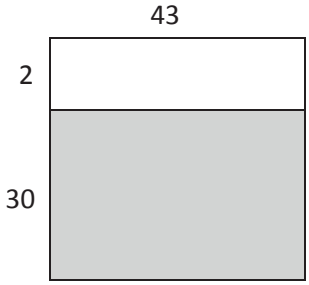


1 2
× 1 4
_____ *4 ones × 12 ones*
_____ *1 ten × 12 ones*

2. Solve 32 × 43 using 4 partial products and 2 partial products. Match each partial product to its area on the models. Remember to think in terms of units as you solve.



4 3
× 3 2
_____ *2 ones × 3 ones*
_____ *2 ones × 4 tens*
_____ *3 tens × 3 ones*
_____ *3 tens × 4 tens*



4 3
× 3 2
_____ *2 ones × 43 ones*
_____ *3 tens × 43 ones*

3. Solve 57 × 15 using 2 partial products. Match each partial product to its rectangle on the area model.

4. Solve the following using 2 partial products. Visualize the area model to help you.

a.
$$\begin{array}{r} 25 \\ \times\ 46 \\ \hline \end{array}$$

_____ × _____

_____

_____ × _____

_____

b.
$$\begin{array}{r} 18 \\ \times\ 62 \\ \hline \end{array}$$

_____ × _____

_____

_____ × _____

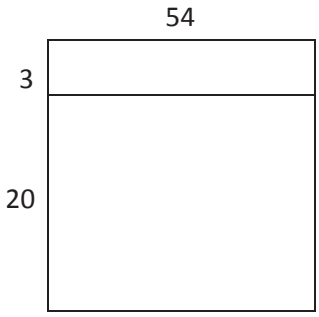
_____

c.
$$\begin{array}{r} 39 \\ \times\ 46 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 78 \\ \times\ 23 \\ \hline \end{array}$$

Name _____ Date _____

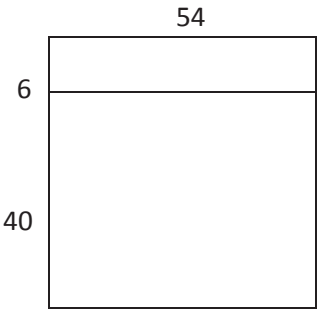
1. Express 23 × 54 as two partial products using the distributive property. Solve.



23 × 54 = (___ fifty-fours) + (___ fifty-fours)

$$\begin{array}{r} 5\ 4 \\ \times\ 2\ 3 \\ \hline \_\_\_\_\_ \quad 3 \times \_\_\_\_\_ \\ \_\_\_\_\_ \quad 20 \times \_\_\_\_\_ \\ \hline \end{array}$$

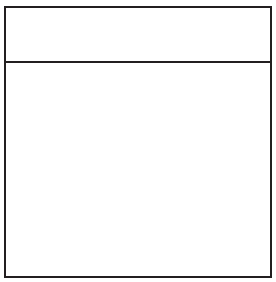
2. Express 46 × 54 as two partial products using the distributive property. Solve.



46 × 54 = (___ fifty-fours) + (___ fifty-fours)

$$\begin{array}{r} 5\ 4 \\ \times\ 4\ 6 \\ \hline \_\_\_\_\_ \quad \_\_\_\_\_ \times \_\_\_\_\_ \\ \_\_\_\_\_ \quad \_\_\_\_\_ \times \_\_\_\_\_ \\ \hline \end{array}$$

3. Express 55 × 47 as two partial products using the distributive property. Solve.



55 × 47 = (_____ × _____) + (_____ × _____)

$$\begin{array}{r} 4\ 7 \\ \times\ 5\ 5 \\ \hline \_\_\_\_\_ \quad \_\_\_\_\_ \times \_\_\_\_\_ \\ \_\_\_\_\_ \quad \_\_\_\_\_ \times \_\_\_\_\_ \\ \hline \end{array}$$

4. Solve the following using 2 partial products.

5 8

× 4 5

_____ ____ × ____

_____ ____ × _____

5. Solve using the multiplication algorithm.

8 2

× 5 5

_____ _____ × _____

_____ _____ × _____

6. 53 × 63

7. 84 × 73

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