Chapter 12

Lesson 1

Name _____ Date/Time _____

Multiplication and Addition

NCTM Standards 1, 2, 6, 7, 8, 9, 10

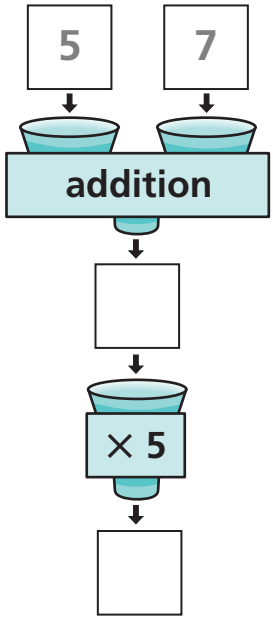
What is the value of the coins?

1 dimes	20¢	2 **5** × the dimes	_____
pennies	3¢	**5** × the pennies	_____
total	_____	**5** × all the coins	$1.15

3 **10** × the dimes	_____	4 **15** × the dimes	_____
10 × the pennies	_____	**15** × the pennies	_____
10 × all the coins	_____	**15** × all the coins	_____
10 × 23 =	_____	**15 × 23 =**	_____

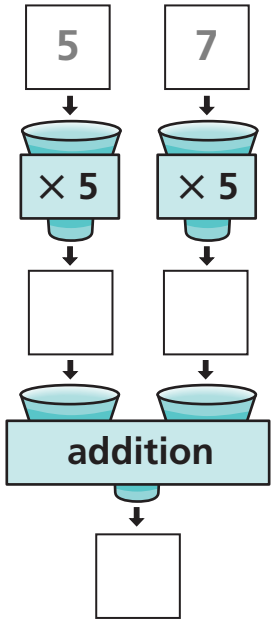
Write the outputs. Then record the calculations in a number sentence.

5



_____

6



_____

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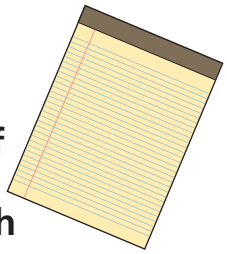
Find the amounts and use them to complete the multiplication sentences.

1 row of **G**s:
G G G G G G G G G G
1 row of **B**s:
B B B B

pencils
8¢ each



pads of paper
10¢ each

---

7 **1** row of **G**s 10

1 row of **B**s _____

1 row of each letter _____

1 × **14** = _____

---

8 **6** rows of **G**s _____

6 rows of **B**s _____

6 rows of each letter _____

6 × **14** = _____

---

9 **10** rows of **G**s _____

10 rows of **B**s _____

10 rows of each letter _____

10 × **14** = _____

---

10 **16** rows of **G**s _____

16 rows of **B**s _____

16 rows of each letter _____

16 × **14** = _____

---

11 **6** pads _____

20 pads _____

26 pads _____

26 × **10** = _____

---

12 **2** pencils _____

5 pencils _____

6 pencils _____

20 pencils _____

26 pencils _____

26 × **8** = _____

---

13 **Challenge**

2 of each item 36¢

5 of each item _____

6 of each item _____

20 of each item _____

26 of each item _____

26 × **18** = _____

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Chapter 12

Lesson 2

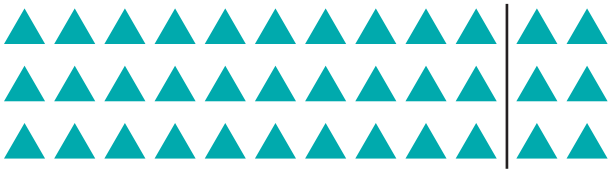
Name _____ Date/Time _____

Using Sums to Multiply

NCTM Standards 1, 2, 6, 7, 8, 9, 10

Complete the multiplication problems to match the diagram. Make the third product equal to the sum of the first two products.

1



10 × 3 = 30

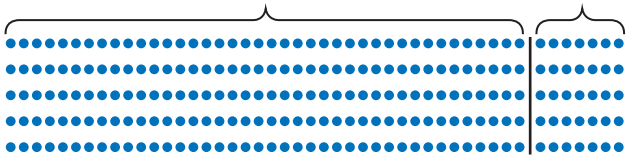
2 × 3 = 6

12 × 3 = ____

2

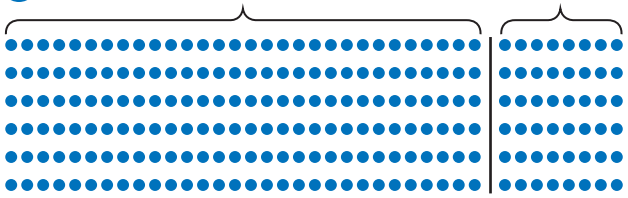
R R R

6



☐	☐	47
× 5	× 5	× 5
☐	☐	☐

7



☐	☐	38
× 6	× 6	× 6
☐	☐	☐

8

Notebooks
21¢ each

Pens
15¢ each

3 pens _____

3 notebooks _____

3 of each item _____

7 pens _____

7 notebooks _____

7 of each item _____

9 For Conall's birthday party, his parents hid packs of 10 trading cards for the children to find. Each of the 8 children found 2 packs, and then each got another 4 cards for game prizes. How many cards did the children collect? Explain how you found your answer.

_____

_____

_____

_____

_____

10 Challenge 37×8

$(\square \times 8) + (\square \times 8)$

$\square + \square = \square$

11 Challenge 23×4

$(\square \times 4) + (\square \times 4)$

$\square + \square = \square$

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Chapter 12

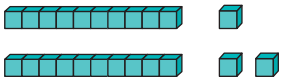
Lesson 3

Name _____ Date/Time _____

Multiplying with Base-Ten Blocks

NCTM Standards 1, 2, 6, 7, 9, 10

Write the number represented by . . .



1. the rods only 20
   the units only 3
   all the blocks 23

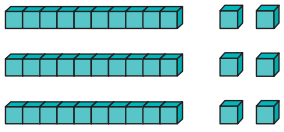
2. 6 × the rods _____
   6 × the units _____
   6 × all the blocks _____

3. 9 × the rods _____
   9 × the units _____
   9 × all the blocks _____

4. 15 × the rods _____
   15 × the units _____
   15 × all the blocks _____

5.
$$\begin{array}{r} 23 \\ \times\ 15 \\ \hline \square \end{array}$$

Write the number represented by . . .



6. the rods only _____
   the units only _____
   all the blocks _____

7. 4 × the rods _____
   4 × the units _____
   4 × all the blocks _____

8. 8 × the rods _____
   8 × the units _____
   8 × all the blocks _____

9. 16 × the rods _____
   16 × the units _____
   16 × all the blocks _____

10.
$$\begin{array}{r} 36 \\ \times\ 16 \\ \hline \square \end{array}$$

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Find each product.

11 How much money?

_____

3 times the amount _____

2 times the amount _____

5 times the amount _____

6 times the amount _____

4 times the amount _____

10 times the amount _____

14 times the amount _____

$$\begin{array}{r} 14 \\ \times 16 \\ \hline \square \end{array}$$

12 How many objects?

a row of 10 cones and 4 pyramids

twice as many objects _____

five times as many objects _____

ten times as many objects _____

$$\begin{array}{r} 14 \\ \times 5 \\ \hline \square \end{array}$$

13 How many letters?

A A A A A B B B B B B B B B

a row of 5 As and 9 Bs

The total number of letters is _____.

three times as many letters _____

five times as many letters _____

half as many letters _____

ten times as many letters _____

$$\begin{array}{r} 14 \\ \times 10 \\ \hline \square \end{array}$$

14 Challenge Complete the tables.

m	5	10	15
7 × *m*	35		

+

m	5	10	15
10 × *m*			

=

m	5	10	15
17 × *m*			

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Chapter 12

Lesson 4

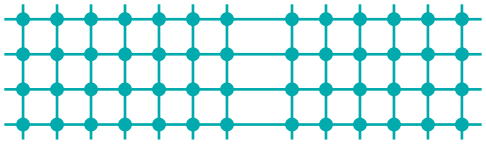
Name _____ Date/Time _____

Multiplying with Arrays

NCTM Standards 1, 2, 6, 7, 8, 9, 10

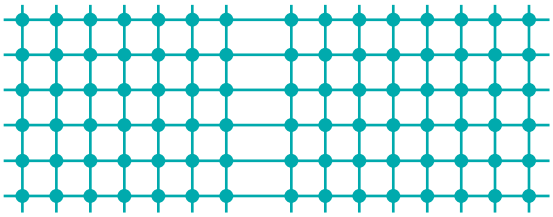
Complete the multiplication sentences to match the arrays. Make the third product equal to the sum of the first two products.

1



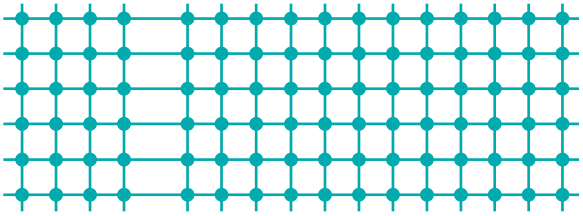
7	6	13
× 4	× 4	× 4

2



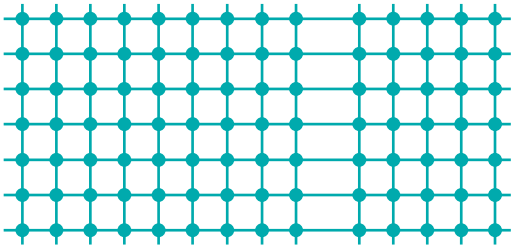
7		
× 6	× 6	× 6

3



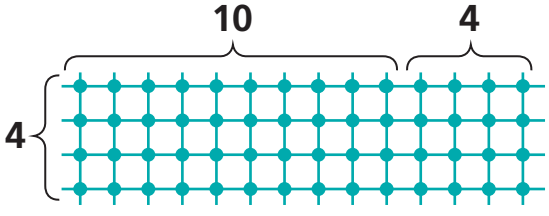
× 6	× 6	× 6

4



× 7	× 7	× 7

5



10	4	14
× 4	× 4	× 4

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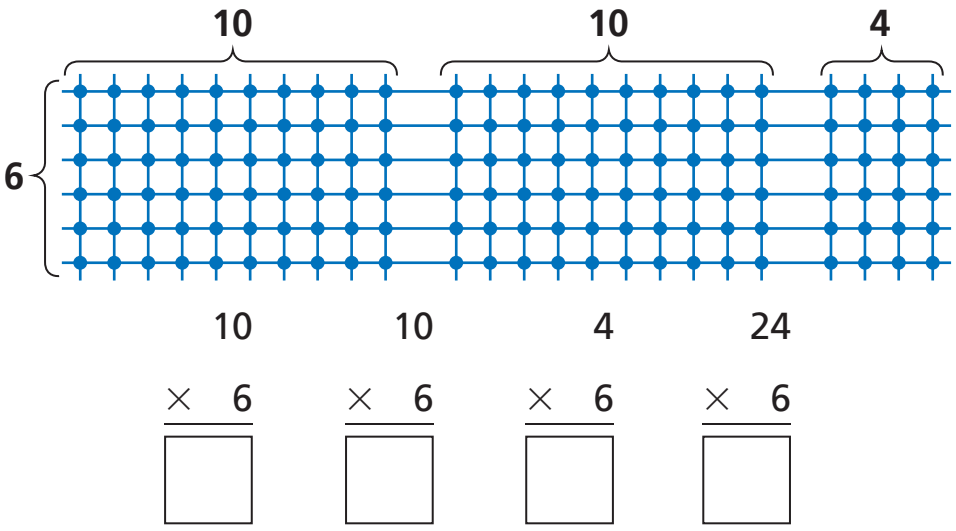
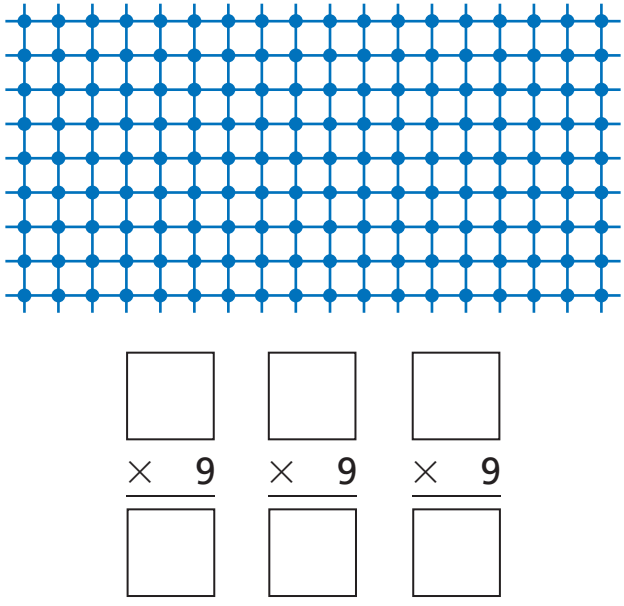
6



Draw a line to split the array into two parts. Complete the multiplication sentences to match your array.

7



8 **Challenge** Hank delivers a newspaper to 29 customers each day. How many newspapers does Hank deliver in one week? Explain how you can find the answer by solving simpler problems.

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Chapter 12

Lesson 5

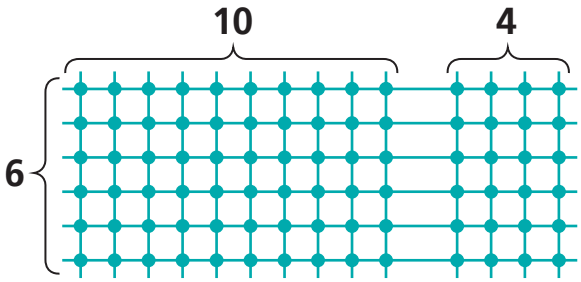
Name _____ Date/Time _____

Separating Arrays to Multiply

NCTM Standards 1, 2, 6, 9, 10

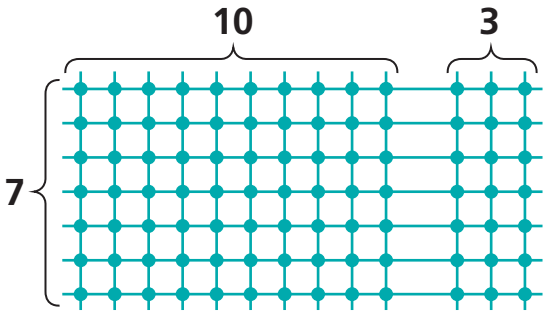
Use the lines and intersections to help complete the multiplication sentences.

1 $14 \times 6 = \square$



10	4	14
× 6	× 6	× 6
☐	☐	☐

2 $13 \times 7 = \square$



10	3	13
× 7	× 7	× 7
☐	☐	☐

Complete the multiplication sentences by imagining the lines and intersections.

3 $18 \times 3 = \square$

	10	8
3	30	24

10	8	18
× 3	× 3	× 3
☐	☐	☐

4 $23 \times 4 = \square$

	4
20	80
3	

20	☐	23
× 4	× 4	× 4
☐	☐	☐

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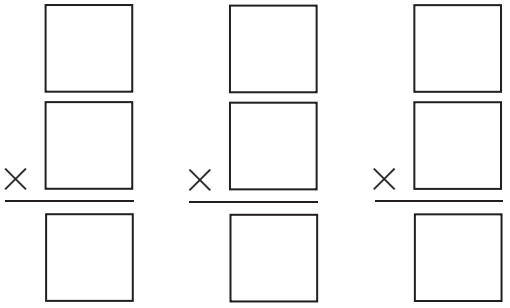
5 $23 \times 9 = \square$

20 3

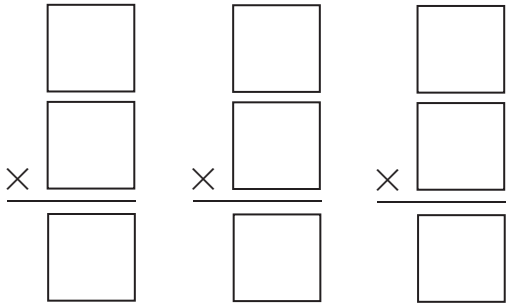
9 | 180 | ☐



6 $45 \times 7 = \square$

5

☐☐



Some of the steps used above are left out. Use your own paper if you want to write the missing steps.

7 $15 \times 9 = \square$

9 ☐☐

8 $26 \times 7 = \square$

7 ☐☐

9 Challenge Ms. Liu's class is making 8 signs to display around town. Each sign will say, "CLOTHING DRIVE AT HILL ELEMENTARY." The students decided to cut each letter out of bright paper to make the signs easy to read. How many letters do they need to cut out to make all the signs?

_____

10 Challenge Mr. Sandy received a shipment of 7 boxes of balls for next year's table tennis tournament. In each box, there were 12 packages with 6 balls in each package. How many balls arrived in the shipment?

_____

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Chapter 12

Lesson 6

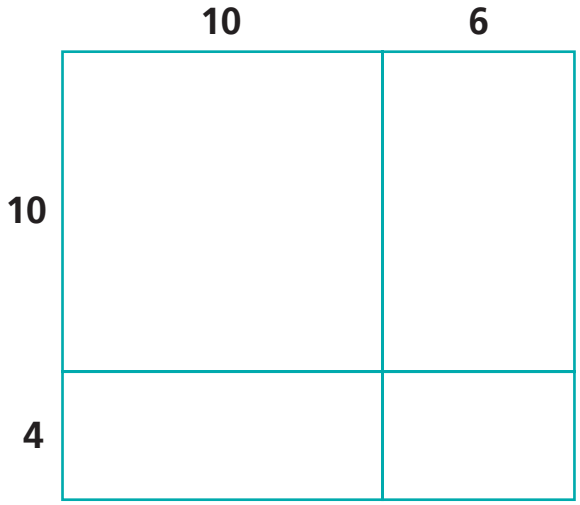
Name _____ Date/Time _____

Multiplying with Larger Numbers

NCTM Standards 1, 2, 6, 7, 8, 9, 10

Complete the multiplication sentences to go with the diagram. You may fill in the diagram if you wish.

1 14×16



10 × 10 = ☐

10 × 6 = ☐

4 × 10 = ☐

4 × 6 = ☐

14 × 16 = ☐

2 17×22

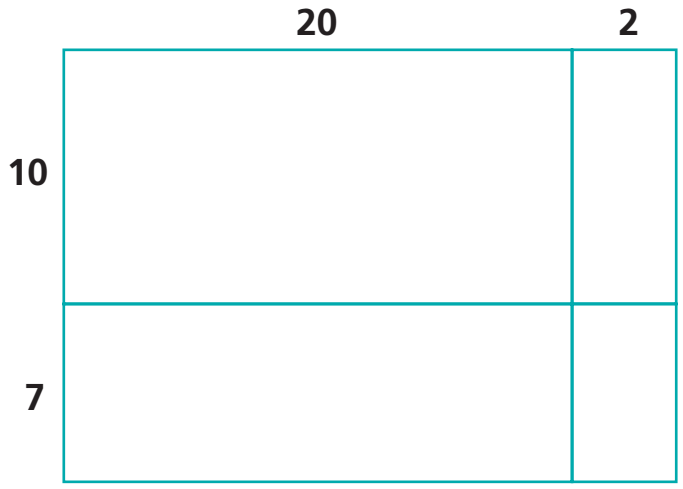
☐ × ☐ = ☐

☐ × ☐ = ☐

☐ × ☐ = ☐

☐ × ☐ = ☐

17 × 22 = ☐



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3 26×18

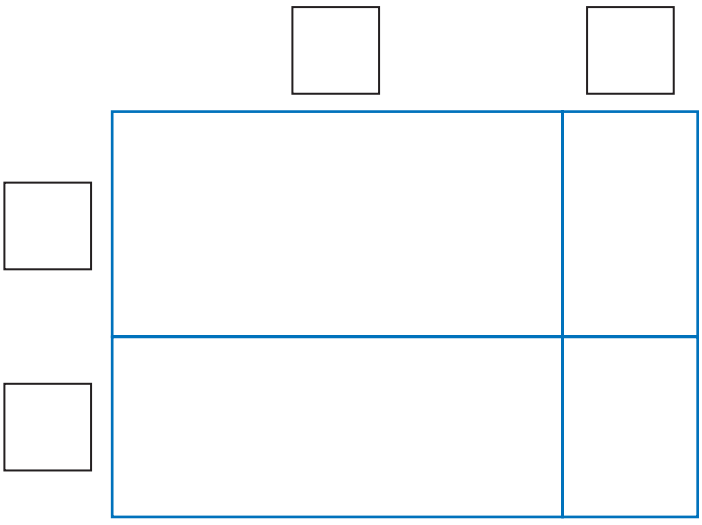
$\square \times \square = \square$

$\square \times \square = \square$

$\square \times \square = \square$

$\square \times \square = \square$

$26 \times 18 = \square$

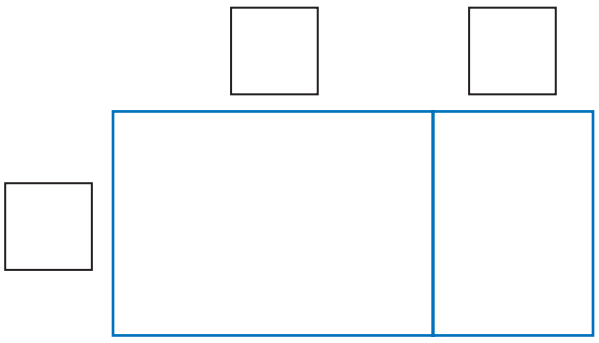


4 Ms. Shaw's class is collecting data on what students eat for breakfast. Every weekday before the class meeting, each student gets a 3-by-5 index card and writes what he or she ate for breakfast that morning. If all 27 of Ms. Shaw's students do this for 3 weeks, how many index cards will be collected? Explain your answer.

5 Challenge

Find the missing factor.

$15 \times \square = 105$



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Chapter 12

Lesson 7

Name _____ Date/Time _____

Finding Missing Factors

NCTM Standards 1, 2, 6, 7, 8, 9, 10

Complete the multiplication sentences. Imagine the lines and intersections or use the rectangle below.

1 14 × 6 = 84

10 × 6 = ☐

4 × ☐ = ☐

☐ × ☐ = ☐

2 ☐ × 5 = 85

10 × ☐ = ☐

7 × ☐ = ☐

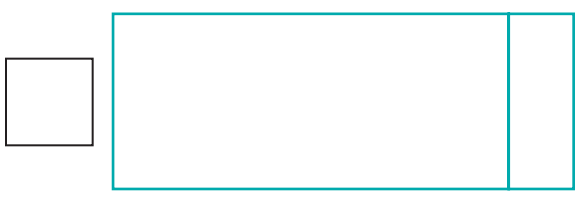
17 × ☐ = ☐

3 ☐ × 7 = ☐

☐ × ☐ = 140

☐ × ☐ = 7

☐ × 7 = ☐



4 ☐ × 3 = 39

☐ × ☐ = ☐

☐ × ☐ = ☐

☐ × ☐ = ☐

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5 $\square \times 7 = \square$

$\square \times \square = \square$

$\square \times \square = \square$

$\square \times 7 = 91$

10

7 | 70 | $\square$

6 $\square \times 5 = 125$

$\square \times \square = \square$

$\square \times \square = \square$

$\square \times \square = \square$

$\square\square$

7 $22 \times \square = 88$

20 | 2

80 | 8

$\square$

$\times \square$

88

8 $\square \times 9 = 126$

9 | $\square\square$

$\square$

$\times 9$

126

9 $\square \times 6 = 162$

$\square \times \square = \square$

$\square \times \square = \square$

$\square \times \square = \square$

10 $\square \times 9 = 297$

$\square \times \square = \square$

$\square \times \square = \square$

$\square \times \square = \square$

11 Challenge Each student in Ms. Deleo's class will need 6 straws for a math exploration. Ms. Deleo has 21 students and 84 straws. Are there enough straws for the exploration? Explain.

_____

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Chapter 12

Lesson 8

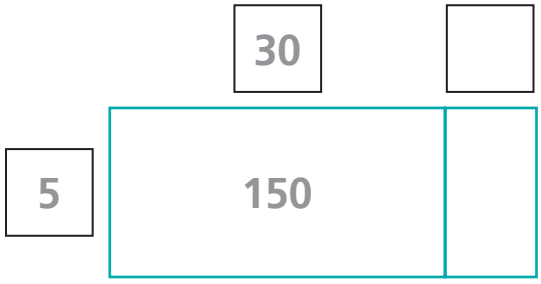
Name _____ Date/Time _____

Division

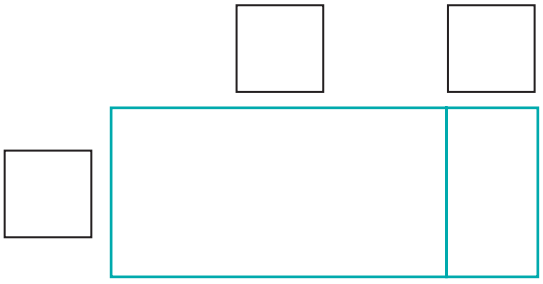
NCTM Standards 1, 2, 6, 7, 9, 10

Solve the division problem. Use the rectangles if you wish.

1 155 ÷ 5 = ☐

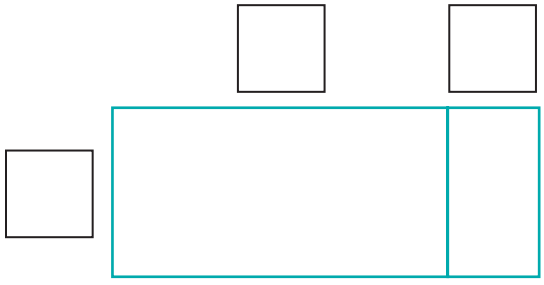


2 45 ÷ 3 = ☐



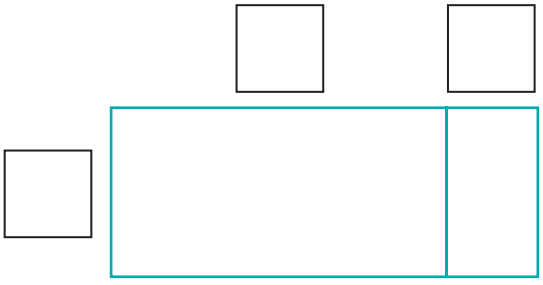
3 ☐

7 ⟌ 196

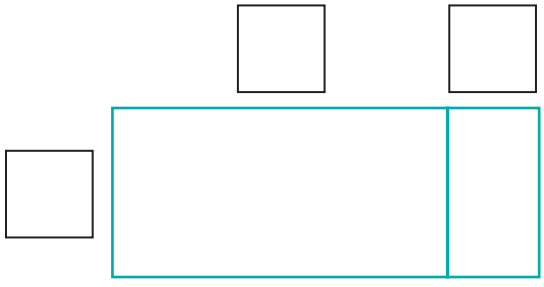


4 ☐

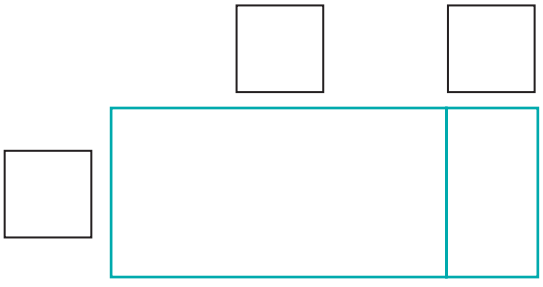
4 ⟌ 132



5 184 ÷ 8 = ☐



6 288 ÷ 8 = ☐



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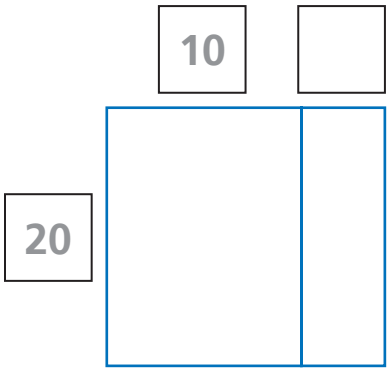
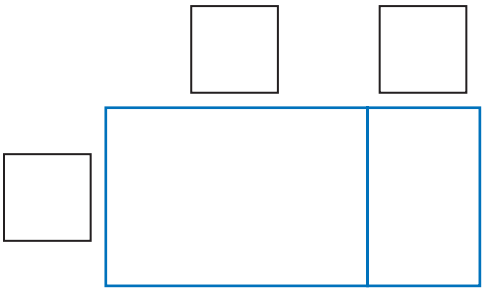
7 $\square$

$20 \overline{)220}$



8 $238 \div 7 = \square$



9 The theater has 144 seats. There are 9 rows of seats.
How many seats are in each row?

Draw a picture to show your work.

Write a number sentence to describe this problem.

_____ seats in each row

10 Challenge There are 16 ounces in 1 pound.

3 pounds = 48 ounces	_____ pounds = 80 ounces
_____ pounds = 128 ounces	_____ pounds = 160 ounces
_____ pounds = 176 ounces	_____ pounds = 240 ounces

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Chapter 12

Lesson 9

Name _____ Date/Time _____

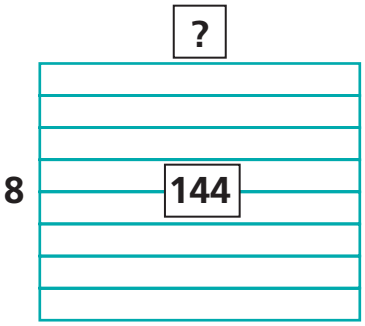
Problem Solving Strategy

Work Backward

NCTM Standards 1, 2, 6, 7, 8, 9

Understand
Plan
Solve
Check

1. Aaron has 144 crayons that he arranges into 8 rows in his crayon box. How many crayons are in each row?



_____ crayons

2. Tom has 3 times as many apples as Susan. Susan has half as many apples as Lauren. Lauren has 14 more apples than Joey. Joey has 6 apples. How many apples does Tom have?

_____ apples

3. Mr. Brown went shopping. He spent $17 on groceries. He used a $20 bill to buy a shirt and received $3.75 in change. He has $15 in his wallet now. How much money did Mr. Brown have in his wallet before he went shopping?

$ _____

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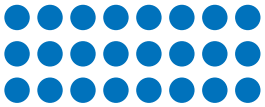
Problem Solving Test Prep

Choose the correct answer.

1 What number completes the multiplication sentence for the array?

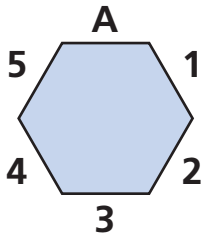


$3 \times \blacksquare = 24$

A. 5 **C.** 7

B. 6 **D.** 8

2 Which side of the figure is parallel to side **A**?



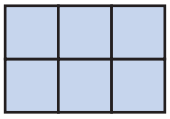
A. 1

B. 2

C. 3

D. 4

3 If you could move the squares to make a different rectangle, what would be the largest perimeter you could make?



A. 10 units **C.** 14 units

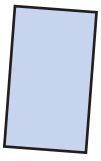
B. 12 units **D.** 16 units

4 Which figure is NOT a rectangle?

A.

C.

B.

D. 

Show What You Know

Solve each problem. Explain your answer.

5 If you have 16 square tiles, what rectangle can you make that will have the smallest perimeter? Explain.

6 After shopping, Carlo has $25 left. He bought 3 shirts that cost $9 each. How much money did Carlo start with? Explain.

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Name _____ Date/Time _____

Chapter 12 Review/Assessment

NCTM Standards 1, 2, 6, 7, 9, 10

What is the value of the coins?

Lesson 1

1. dimes _____ ¢

   pennies _____ ¢

   total _____ ¢

2. **5** × the dimes $2.50

   5 × the pennies 20¢

   5 × all the coins _____

3. **10** × the dimes _____

   10 × the pennies _____

   10 × all the coins _____

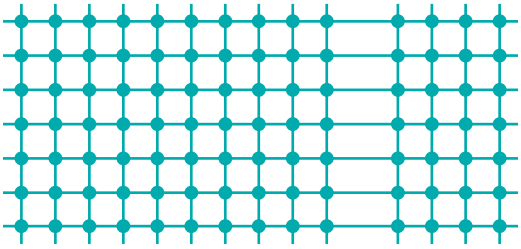
4. **15** × the dimes _____

   15 × the pennies _____

   15 × all the coins _____

Complete the multiplication sentences. Lesson 4

5.



10	4	
× 7	× 7	× 7

6. 37 × 6 Lesson 5

	30	7
6		

30		37
× 6	× 6	× 6

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7 $\square \times 4 = 60$ Lesson 7

10		
× 4	× 4	× 4
		60

8 $\square \times 8 = 104$ Lesson 7

8		
×	×	×
		104

9 14×16 Lesson 6

	10	6
10	100	
4		

10	10	4	4	14
× 10	× 6	× 10	× 6	× 16

10 $65 \div 5 = \square$ Lesson 8

11 Kyle earns money doing yard work. He deposits two thirds of what he earns in a savings account and keeps the rest to spend. Last month he kept $36. How much did Kyle earn? Lesson 9

12 Alma found a rope in her garage. She cut off 3 pieces that were each 20 centimeters long. Then she cut the remaining rope into 2 equal pieces that were each 15 centimeters long. How long was the rope Alma found in her garage? Lesson 9

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