Name _____

Algebra • Describe Patterns

The table shows the number of candles in different numbers of packs. How many candles will be in 4 packs?

Packs	1	2	3	4
Candles	2	4	6	

Describe a pattern in the columns.

Step 1 Look for a pattern by comparing the columns in the table. You can multiply the number of packs by 2 to find the number of candles in all.

$1 \times 2 = 2$

$2 \times 2 = 4$

$3 \times 2 = 6$

Multiply by 2 candles for each pack.

Step 2 Use the pattern to find the number of candles in 4 packs.

$4 \times 2 = 8$

So, there are 8 candles in 4 packs.

Describe a pattern for the table. Then complete the table.

1.

Tricycles	1	2	3	4	5
Wheels	3	6	9		

_____

_____

2.

Boxes	1	2	3	4	5
Baseballs	6	12	18		

_____

_____

Name _____

Multistep Problems

Solve.

1. Keith bought 2 flats of strawberries. Each flat contains 8 baskets. If he gave away 4 baskets, how many baskets does Keith have left?

_____

2. Tim's friends gave him $15 for pizza. If he buys 3 pizzas for $7 each, how much more money does Tim need?

_____

3. One bag contains 6 apples. Jeremy bought 5 bags of apples. If Jeremy gave away 5 apples, how many apples does he have left?

_____

4. Greeting cards come in packages of 8 cards for $4. How many greeting cards can Sheila buy for $24?

_____

5. Anna is having a party. She needs 15 invitations. The invitations come in packages of 7. How many packages of invitations does Anna need to buy?

_____

6. Steve is decorating for a party. He wants to have 2 blue balloons and 1 yellow balloon in each corner of a square room. How many balloons does Steve need?

_____

7. Write Math **Explain** how you solved Problem 2.

_____

_____

_____

_____

Name _____

Algebra • Find Unknown Numbers

Lily has 20 stuffed animals. She wants to put the same number of stuffed animals on each of 5 shelves. How many stuffed animals will Lily put on each shelf?

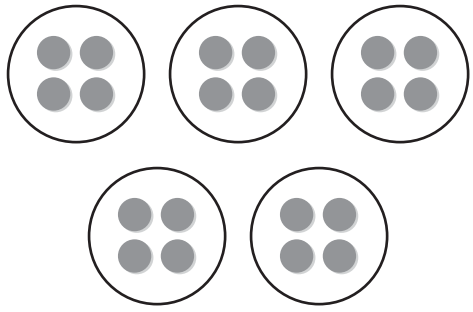
Find the unknown number. $5 \times c = 20$

You can use counters to find the unknown number.

Step 1 Use 20 counters.

Step 2 Make 5 equal groups. Place 1 counter in each of the groups until you have placed all 20 counters.

Step 3 Count the number of counters in each group.
4 counters



$c = 4$

$5 \times 4 = 20$

So, Lily will put 4 stuffed animals on each of the 5 shelves.

Find the unknown number.

1. $3 \times b = 24$

$b =$ _____

2. $n \times 7 = 21$

$n =$ _____

3. $36 = 4 \times z$

$z =$ _____

4. $7 \times 8 = s$

$s =$ _____

5. $r \times 5 = 45$

$r =$ _____

6. ■ $\times 4 = 40$

■ = _____

7. $p = 3 \times 4$

$p =$ _____

8. $m \times 6 = 42$

$m =$ _____

9. $6 \times h = 36$

$h =$ _____

10. $63 = 7 \times d$

$d =$ _____

11. $3 \times y = 6$

$y =$ _____

12. $32 = 4 \times$ ▲

▲ = _____

Name _____

Factor Riddles

Solve the riddles.

1. I have 4 factors. Three of my factors are 1, 2, and 10. What is my fourth factor?

_____

2. I have 4 factors. Three of my factors are 1, 2, and 6. What is my fourth factor?

_____

3. I am the product 30. Two of my factors are 2 and 3. What are my other factors?

_____

4. Our product is equal to $3 + 3 + 3$. What factors are we?

_____

5. Our product is equal to $6 + 2$. What factors are we?

_____

6. One of my factors is equal to $5 - 2$. I am the product 24. What are my other factors?

_____

7. I am a 2-digit product. One of my digits is the same as one of my factors, 8. The other digit doubled is 8. What product am I?

_____

8. My product can be written using repeated addition as $5 + 5 + 5 + 5 + 5 + 5 + 5 + 5$. What are my factors?

_____

9. Write Math **Explain** how you solved the riddle in Exercise 7.

_____

_____

_____

_____

10. **Stretch Your Thinking** Write your own riddle and solve it.

_____

_____

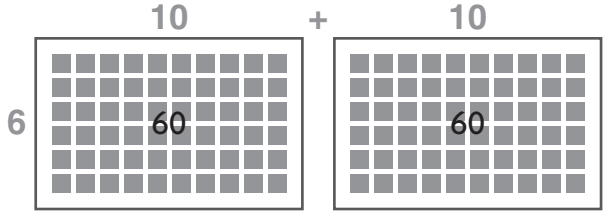
_____

_____

Name _____

Problem Solving • Use the Distributive Property

There are 6 rows of singers in a performance. There are 20 singers in each row. How many singers are in the performance?

Read the Problem	Solve the Problem
What do I need to find? I need to find how many singers are in the performance	**Record the steps you used to solve the problem.**  First, I draw and label a diagram to show 6 rows of 20 singers. Next, I break apart 20 into 10 + 10 and find the products of the two smaller rectangles. $6 \times 10 =$ _____ $6 \times 10 =$ _____ Then, I find the sum of the two products. _____ + _____ = _____ $6 \times 20 =$ _____ So, there are _____ singers.
What information do I need to use? There are 6 rows of singers. Each row has 20 singers.	
How will I use the information? I can draw a diagram and use the Distributive Property to break apart the factor 20 into 10 + 10 to use facts I know.	

1. Eight teams play in a Little League series. Each team has 20 players. How many players are in the series?

_____

2. The assembly room has 6 rows with 30 chairs in each row. If third graders fill 3 rows, how many third graders are in the room?

_____

Name _____

Apply the Distributive Property

Use the Distributive Property to help solve each problem.

Use this problem for 1–3.

An artist sells 4 paintings for $20 each, 4 sculptures for $60 each, and 4 photographs for $10 each at her art show.

1. How much money does the artist make on these sales in all?

_____

2. The artist sells 2 more paintings and 4 more sculptures at the same prices. What is the total amount of money the artist has made so far?

_____

3. How many more paintings, sculptures, and photographs would the artist need to sell to make another $500?

_____

_____

Use this problem for 4–6.

Lee has 6 sheets of stickers with 30 stickers on each sheet. She has 8 sheets with 20 stickers each and 9 sheets with 10 stickers each.

4. How many stickers does Lee have in all?

_____

5. Lee gives 4 sheets with 20 stickers and 3 sheets with 10 stickers to her sister. How many stickers does Lee have left?

_____

6. Now Lee gives some stickers to her friend Myla. What sheets does Lee give to Myla if she has 200 stickers left?

_____

_____

7. Write Math How did the Distributive Property help you solve the problems?

_____

_____

Name _____

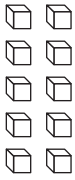
Multiplication Strategies with Multiples of 10

You can use place value to multiply with multiples of 10.

Find 5 × 20.

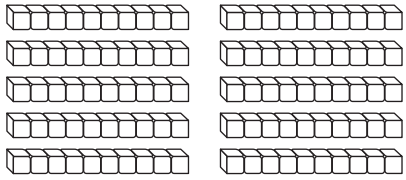
Step 1 Use a multiplication fact you know.

Think: 5 × 2 = 10, so
5 × 2 ones = **10** ones



Step 2 Use place value to find the product.

Think: 5 × 2 tens = **10** tens, or **100**

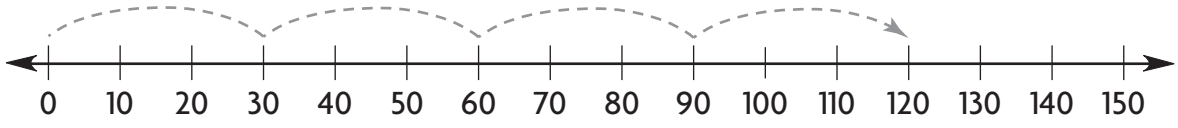


So, 5 × 20 = **100**.

You can also use a number line to multiply with multiples of 10.

Find 4 × 30.

Think: There are 4 groups of 30. Draw **4** jumps of 30.



So, 4 × 30 = **120**.

Use place value to find the product.

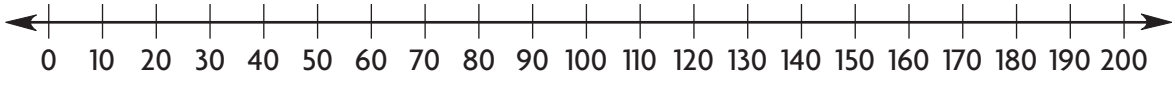
1. 6 × 40 = 6 × _____ tens

= _____ tens = _____

2. 50 × 7 = _____ tens × 7

= _____ tens = _____

3. Use a number line to find the product. 3 × 50 = _____

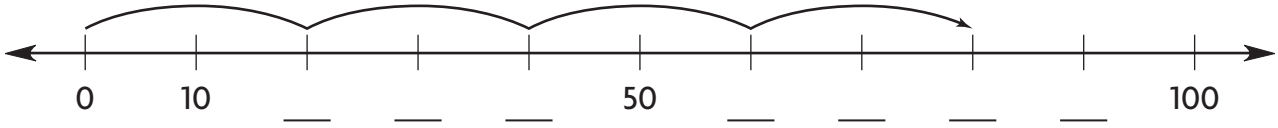


Name _____

Jump to the Product

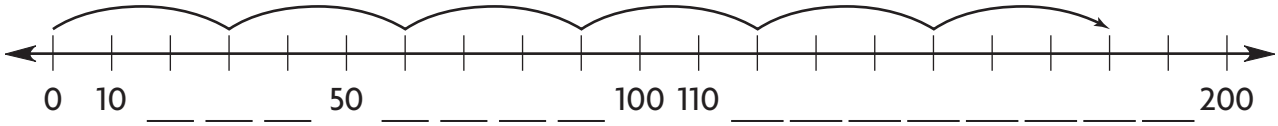
Complete the model to find the unknown factor or factors. Then write a multiplication equation that represents the model.

1. The product is 80. One factor is 4.



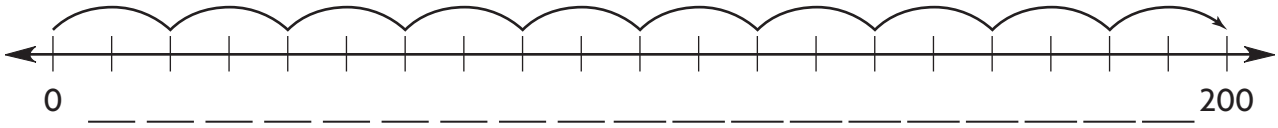
The unknown factor is _____. _____

2. The product is 180. One factor is a multiple of 10.



The factors are _____ and _____. _____

3. **Stretch Your Thinking** The product is 200. Both factors are multiples of 10.



The factors are _____ and _____. _____

4. Write Math Look back at Exercise 2. If one factor is a multiple of 10, what other pairs of factors would give you a product of 180?

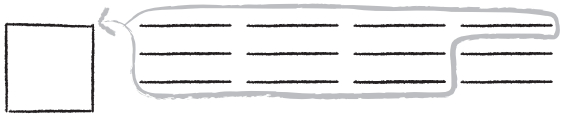
_____

Name _____

Multiply Multiples of 10 by 1-Digit Numbers

You can use place value and regrouping to multiply multiples of 10.

Find 3 × 40.

Step 1 Use quick pictures to draw 3 groups of 40. 	**THINK** Multiply the ones. 3 × 0 ones = **0** ones.	**RECORD** 40 × 3 **0**
Step 2 Regroup the 12 tens. 	Multiply the tens. 3 × **4** tens = **12** tens Regroup the **12** tens as **1** hundred **2** tens	40 × 3 **12**0

So, 3 × 40 = **120**.

Find the product. Draw a quick picture.

1. 4 × 50 = _____

2. 7 × 30 = _____

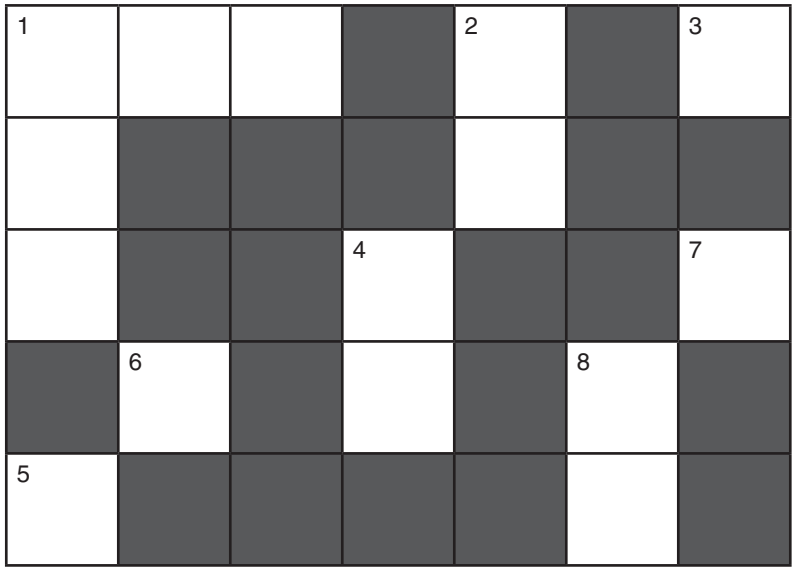
3. _____ = 9 × 20

4. 6 × 70 = _____

Name _____

Multiplication Puzzle

Find the unknown factors and products. Then use your answers to complete the puzzle.



Across

1. $2 \times 70 = \square$

$\square$ = _____

2. $80 \times a = 240$

a = _____

3. $b \times 80 = 720$

b = _____

5. $60 \times c = 420$

c = _____

7. $d \times 90 = 0$

d = _____

Down

1. $2 \times 80 = \square$

$\square$ = _____

2. $p \times 1 = 30$

p = _____

4. $8 \times q = 560$

q = _____

6. $90 \times r = 360$

r = _____

8. $s \times 9 = 810$

s = _____