

Simplify each expression.

1 $11m - 9m = \underline{\hspace{2cm}}$

2 $y + 8y = \underline{\hspace{2cm}}$

3 $13s - s = \underline{\hspace{2cm}}$

4 $d + 2d + d = \underline{\hspace{2cm}}$

5 $(9b - b) - 2b = \underline{\hspace{2cm}}$

6 $104z + z = \underline{\hspace{2cm}}$

7 $21 - (10 - 5) = \underline{\hspace{2cm}}$

8 $(900 - 100) - 100 = \underline{\hspace{2cm}}$

9 $90 - (50 - 1) = \underline{\hspace{2cm}}$

10 $18 \div (27 \div 9) = \underline{\hspace{2cm}}$

11 $(63 \div 7) \div 9 = \underline{\hspace{2cm}}$

12 $40 \div (36 \div 9) = \underline{\hspace{2cm}}$

13 $(48 \div 6) \cdot (11 - 9) = \underline{\hspace{2cm}}$

14 $(3 + 17) \div (16 - 12) = \underline{\hspace{2cm}}$

15 $(15 + 10) - (50 \div 10) = \underline{\hspace{2cm}}$

16 $(19 + 11) \div (9 - 6) = \underline{\hspace{2cm}}$

Evaluate.

17 $c = 3$

$4 \cdot (7 - c)$

18 $r = 2$

$(42 \div 7) \cdot (r + 1)$

19 $w = 7$

$(72 \div 9) \cdot w$

20 $m = 0$

$(12 \div 3) \cdot (5 - m)$

21 $h = 14$

$45 \div (h - 5)$

22 $p = 19$

$(p + 1) \div (9 - 4)$

23 $v = 6$

$(18 - 9) + (2 + v)$

24 $t = 1$

$(7 \cdot 2) \div t$

25 $g = 10$

$(g + 90) \div (17 - 13)$

Solve for \square or n .

26 $7 \cdot (3 + 2) = 7 \cdot \square$

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

27 $(9 - 1) \cdot 4 = \square \cdot 4$

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

28 $8 \cdot (4 + 5) = \square \cdot 9$

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

29 $6 \cdot (8 - 8) = n$

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

30 $(12 - 6) \div 3 = n$

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

31 $(21 \div 7) \cdot (5 + 5) = n$

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

Read and write each number in expanded form.

- 1 ninety-six thousand, one hundred thirty-seven

- 2 four hundred thirteen thousand, five hundred twenty-one

- 3 seven hundred eight thousand, fifty-three

- 4 six hundred thirty thousand, four hundred seventeen

Find the area (in square units) of a rectangle with the given dimensions.

5 4×6 _____

6 4×60 _____

7 5×9 _____

8 50×9 _____

Divide with remainders.

9 $9 \overline{)28}$

10 $3 \overline{)17}$

11 $6 \overline{)46}$

12 $7 \overline{)54}$

- 13 **Stretch Your Thinking** Evaluate the expression $(d - 10) + (d \div 3)$ for $d = 21$. Explain each step.

Write = or \neq to make each statement true.

1 $5 + 2 + 6$ ○ $6 + 7$

2 90 ○ $110 - 9$

3 70 ○ $30 + 30$

4 70 ○ $95 - 25$

5 $2 + 8 + 10$ ○ 30

6 $27 - 10$ ○ $14 + 3$

7 $51 + 99$ ○ 150

8 35 ○ $100 - 55$

9 50 ○ $20 + 5 + 20$

- 10 Write the eight related addition and subtraction equations for the break-apart drawing.



Write an equation to solve the problem. Draw a model if you need to.

Show your work.

- 11 There were some people at the arts and crafts fair. Then 347 people went home. Now 498 people are left at the fair. How many people were at the fair to start?

- 12 A group of scientists spends 3,980 hours observing the behavior of monarch butterflies. They spend some more hours recording their observations. Altogether, the scientists spend 5,726 hours observing the butterflies and recording their observations. How many hours do the scientists spend recording their observations?

Solve.

1 What is 538,152 rounded to the nearest:

a. hundred? _____

b. thousand? _____

c. ten thousand? _____

d. hundred thousand? _____

Draw a rectangle model. Find the tens product, the ones product, and the total product.

2 3×65

3 8×29

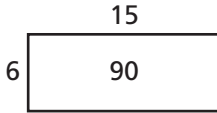
Evaluate each expression.

4 $(12 - 4) \cdot (6 + 3) =$ _____

5 $(8 \div 2) + (12 - 2) =$ _____

6 **Stretch Your Thinking** There were 381 books sold at a children's used book fair. At the end of the day, there were still 493 books remaining. Samantha says there were 112 books at the start of the book fair. Explain her error. How many books were there at the start of the book fair?

- 1 Write the eight related multiplication and division equations for the rectangle model below.



Solve each equation.

2 $r = 200 \div 5$

$r =$ _____

3 $12 \times d = 84$

$d =$ _____

4 $80 \div 10 = n$

$n =$ _____

5 $120 = 10 \times m$

$m =$ _____

6 $88 = 8 \times c$

$c =$ _____

7 $100 \div q = 20$

$q =$ _____

Write an equation to solve the problem. Draw a model if you need to.

- 8 Lucy bought some shrubs to plant in her garden. Each shrub cost \$9. If Lucy spent \$216 in all, how many shrubs did she buy?

Show your work.

- 9 Jeremiah has 592 flyers in stacks of 8 flyers each. How many stacks of flyers did Jeremiah make?

- 10 The apples from an average-sized tree will fill 20 baskets. If an orchard has 17 average-sized trees, how many baskets of apples can it produce?

Use the Algebraic Notation Method to solve the problem.
Complete the steps.

1 $5 \cdot 68$ _____

$$68 = \underline{\quad} + \underline{\quad}$$

--	--

$$\begin{aligned} 5 \cdot 68 &= \underline{\quad} \cdot (\underline{\quad} + \underline{\quad}) \\ &= 300 + 40 \\ &= 340 \end{aligned}$$

Solve. Use the Place Value Sections and the Expanded Notation Methods for division.

2 $\underline{\quad}0 + \underline{\quad} =$

234	
-----	--

$$3 \overline{)234}$$

3 $\underline{\quad}0 + \underline{\quad} =$

468	
-----	--

$$9 \overline{)468}$$

Write = or \neq to make each statement true.

4 $40 + 40 \bigcirc 90$

5 $12 - 4 \bigcirc 12 + 4$

6 $4 + 7 \bigcirc 4 + 2 + 5$

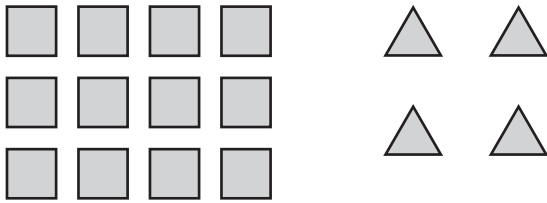
7 $26 \bigcirc 30 - 4$

8 $8 + 10 + 2 \bigcirc 20$

9 $85 - 25 \bigcirc 65$

10 **Stretch Your Thinking** Write a word problem about puzzle pieces using the equation $9 \times p = 450$. Then solve the equation.

Use the shapes to answer Exercises 1–4.



- 1 How many squares? How many triangles?
Use multiplication to find the answers.

- 2 Because $4 \times \underline{\hspace{2cm}} = 12$, there are $\underline{\hspace{2cm}}$ times
as many squares as triangles.

- 3 Write a multiplication equation that compares
the number of squares s to the number of
triangles t .

- 4 Write a division equation that compares the
number of triangles t to the number of
squares s .

Solve each comparison problem.

- 5 Stephen and Rocco were playing a video game.
Stephen scored 2,500 points which is 5 times as
many points as Rocco scored. How many points
did Rocco score?

- 6 Nick's dog weighs 72 pounds. Elizabeth's cat weighs
9 pounds. How many times as many pounds does
Nick's dog weigh as Elizabeth's cat weighs?

Solve using any numerical method. Use rounding and estimating to see if your answer makes sense.

$$\begin{array}{r} 1 \quad 71 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 36 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 94 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 77 \\ \times 6 \\ \hline \end{array}$$

Divide.

$$5 \quad 6 \overline{)89}$$

$$6 \quad 5 \overline{)485}$$

$$7 \quad 4 \overline{)743}$$

Solve each equation.

$$8 \quad 9 \times n = 108$$

$$9 \quad 40 \div t = 10$$

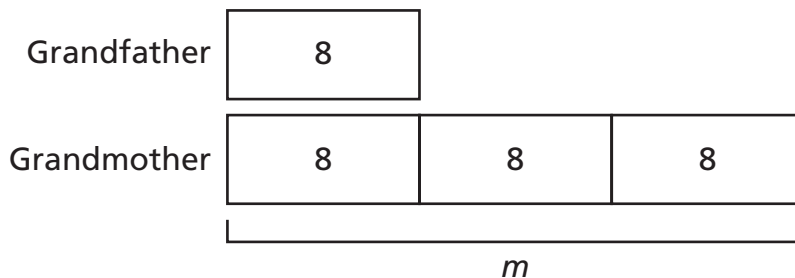
$$10 \quad r = 56 \div 7$$

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

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

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

11 **Stretch Your Thinking** Write and solve a word problem to match the comparison bars shown below.



**Write and solve an equation to solve each problem.
Draw comparison bars when needed.**

Show your work.

- ① This year, a business had profits of \$8,040. This is 4 times as great as the profits that the business had last year. What were last year's profits?
-

- ② In July 74,371 people visited an art museum. In August 95,595 people visited the art museum. How many fewer people visited the art museum in July than in August?
-

- ③ Drake has 36 animal stickers. Brenda has 9 animal stickers. How many times as many animal stickers does Drake have as Brenda has?
-

- ④ A game is being watched by 60 adults and some children. If there are 20 more adults than children, how many children are watching the game?
-

- ⑤ During the first lunch period, 54 students ate hot lunch. This is 9 fewer students than ate hot lunch during the second lunch period. How many students ate hot lunch during the second lunch period?
-

- ⑥ The Jenkins Family traveled 750 miles by car during the summer. The Palmer Family traveled 3 times as many miles by car this summer. How many miles did the Palmer Family travel?
-

Copy each exercise, aligning the places correctly. Then add.

① $11,931 + 3,428$

② $25,422 + 89,360$

Draw a rectangle model. Solve using any method that relates to the model.

③ 3×428 _____

④ 7×519 _____

Write and solve an equation to solve the problem.

Draw comparison bars if you need to.

- ⑤ Virginia sold 84 rolls of wrapping paper this year. She sold 3 times as many rolls of wrapping paper this year as she sold last year. How many rolls of wrapping paper did Virginia sell last year?

- ⑥ **Stretch Your Thinking** There are 1,438 boys and 1,196 girls at a school. How many fewer girls are there than boys?

Write the comparison question for this problem in a different way. Then write and solve an equation to solve the problem. Draw comparison bars if you need to.

The graph below shows the amount of snow recorded each month last winter. Use the graph for Problems 1–6.

- 1 During which month was the amount of snow recorded 12 inches greater than the amount of snow recorded in December?

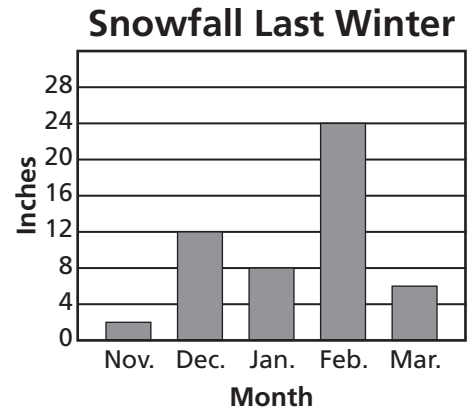
- 2 How many fewer inches of snow were recorded in March than were recorded in February?

- 3 The total amount of snow shown in the graph is 4 times as much snow as was recorded during the winter of 2004. How much snow was recorded during the winter of 2004?

- 4 Write an addition equation and a subtraction equation that compare the number of inches of snow recorded during December (d) to the number of inches of snow recorded during March (m).

- 5 Write a multiplication equation and a division equation that compare the number of inches of snow recorded during November (n) to the number of inches of snow recorded during January (j).

- 6 On a separate sheet of paper, write a sentence about the graph that contains the words *times as much*.



Sketch an area model for each exercise. Then find the product.

1 28×45 _____

2 53×96 _____

Solve using any method.

3 $9 \overline{)506}$

4 $2 \overline{)538}$

5 $7 \overline{)8,165}$













Write and solve an equation to solve each problem.
Draw comparison bars when needed.


Show your work.

- 6 Benjamin received 52 emails at work today. This is 4 times as many emails as he received yesterday. How many emails did Benjamin receive yesterday?

- 7 There are 327 third-grade students on a field trip at the history museum. There are 423 fourth-grade students on the same field trip. How many fewer third-grade students are there than fourth-grade students on the field trip?

- 8 **Stretch Your Thinking** Look at the graph. Tatiana says there are 4 more dog owners than fish owners in the classroom. Explain Tatiana's error. Then write an equation that compares the numbers of dog owners and fish owners in the classroom.

Pet Owners in the Classroom	
Pet	
Cat	  
Bird	
Dog	     
Fish	 

 = 2 students

Use an equation to solve.

Show your work.

- 1 The soccer club has 127 members. The baseball club has 97 members. Both clubs will meet to discuss a fundraiser. The members will be seated at tables of 8 members each. How many tables will they use?

- 2 A hardware store pays \$3,500 for 42 lawnmowers. Then the store sells the lawnmowers for \$99 each. How much profit does the store make from the lawnmower sales?

- 3 George buys a set of 224 stamps. He gives 44 stamps to a friend. Then he places the remaining stamps into an album with 5 stamps on each page. How many pages does he fill in his album?

- 4 Shane and his family go to the movie theater and buy 6 tickets for \$12 each. Then they spend a total of \$31 for popcorn and drinks. How much did Shane and his family spend for tickets, popcorn and drinks at the movie theater?

- 5 Last year, 226 people attended the school graduation ceremony. This year, the school expects 125 more people than last year. The school has arranged for a van to transport people from the parking area to the ceremony. Each van holds 9 people. How many trips will the van make?

Solve each multiplication problem, using any method.
Use rounding and estimation to check your work.

1 22×58

2 34×91

3 63×72

4 17×56

Solve by using any method. Then check your answer by
rounding and estimating.

5 $9 \overline{)39}$

6 $4 \overline{)168}$

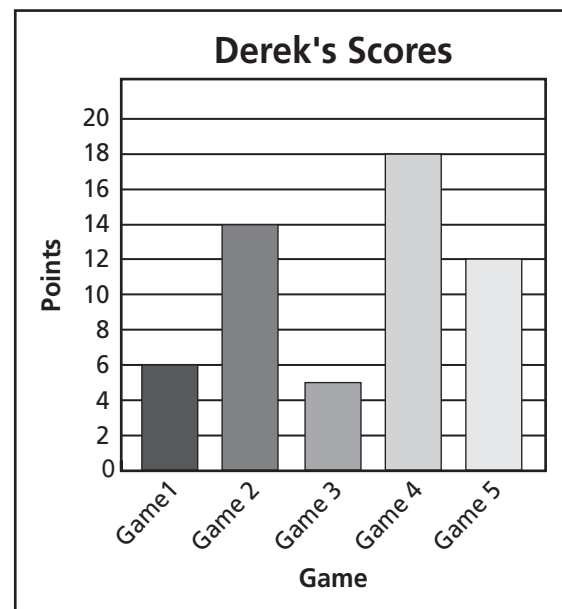
7 $5 \overline{)4,204}$

The graph shows the number of points Derek scored
during his first five basketball games.

- 8 Write a multiplication equation and a division equation that compare the number of points Derek scored during Game 1 (x) to the number of points Derek scored during Game 4 (y).

- 9 **Stretch Your Thinking** There will be 138 people at a fundraising auction. Each table seats six. An additional 3 tables are needed to display the auction items. What is the minimum number of tables that are needed for the fundraiser? Which equation *cannot* be used to answer this question? Explain.

$$138 \div (6 + 3) = t \qquad (138 \div 6) + 3 = t$$



Use an equation to solve.

Show your work.

- 1 Rosa and Kate both went shopping. Kate bought a jacket for \$45 and boots for \$42. Rosa bought jeans for \$27, a sweater for \$22, and sneakers. They both spent the same exact amount of money. How much were Rosa's sneakers?

- 2 Kyle works at a bakery on weekends. On Saturday, Kyle needs to make 120 muffins. Each recipe makes 8 muffins and uses 2 cups of flour. On Sunday, he needs to bake a large batch of cookies that uses 6 cups of flour. How many cups of flour will Kyle use to bake the muffins and the cookies?

- 3 A toy factory made 715 small stuffed bears and packed them in boxes with 5 bears in each box. Then they made 693 large stuffed bears and packed them in boxes with 3 bears in each box. All the boxes of small and large stuffed bears are loaded into a truck for delivery. How many boxes are loaded into the truck?

- 4 Last summer, Chris went to Europe and bought postcards from the cities he visited. In France, he visited 6 cities and bought 11 postcards in each city. In Italy, he visited 7 cities and bought 9 postcards in each city. In Spain, he visited 10 cities and bought 15 postcards in each city. How many postcards did Chris buy in Europe?

- 5 Three fourth grade classes went on a field trip to see a play. Each class had 19 students and 2 adults attending. The rows in the playhouse each seat 9 people. How many rows did the fourth grade classes and adults take up at the playhouse?

Add or subtract.

$$\begin{array}{r} 1 \quad 9,000 \\ - 5,613 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 317,492 \\ + 36,057 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 659,741 \\ - 652,438 \\ \hline \end{array}$$

Solve. Then explain the meaning of the remainder.

- 4 Jessica needs to bake 50 muffins. Her baking pan holds 12 muffins. How many rounds of baking will she need to do?

Use an equation to solve.

Show your work.

- 5 At the fair, Hannah bought her family 5 hot dogs for \$3 each and a pitcher of lemonade for \$6. How much money did she spend in all?

- 6 Reggie is keeping 7 of his 31 stuffed animals and splitting the remainder of his collection evenly among his 3 younger sisters. How many stuffed animals does each sister get?

- 7 **Stretch Your Thinking** Write a word problem using the equation $(\$60 + \$3 - \$15) \div \$4 = w$. Then solve the equation to solve the problem.

Solve each problem.

1 $5 \times 7 + 9 = t$

2 $9 \times (1 + 3) = m$

3 $7 - 2 \times 2 = k$

4 $(7 \times 2) + (4 \times 9) = w$

5 $(7 - 2) \times (3 + 2) = r$

6 $8 \times (12 - 7) = v$

- 7 Whitney and Georgia are at the snack bar buying food for their family. Sandwiches cost \$4 each. Salads cost \$2 each. How much money will it cost them to buy 5 sandwiches and 7 salads?
- _____

- 8 Lisa put tulips and roses into vases. Each vase has 12 flowers. The red vase has 7 tulips. The blue vase has twice as many roses as the red vase. How many roses are in the blue vase?
- _____

- 9 Pam has 9 bags of apples. Each bag contains 6 apples. There are 3 bags of red apples and 1 bag of green apples. The rest of the bags contain yellow apples. How many more yellow apples are there than red apples?
- _____

- 10 Clay works on a farm. He packaged eggs into containers that hold 1 dozen eggs each. He filled 4 containers with white eggs and 5 containers with brown eggs. How many eggs did Clay collect? Hint: one dozen eggs = 12 eggs
- _____

Subtract. Show your new groups.

$$\begin{array}{r} 1 \quad 3,146 \\ - 1,960 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 7,504 \\ - 2,738 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 6,000 \\ - 5,241 \\ \hline \end{array}$$

Solve using any method and show your work.

Use estimation to check your work.

$$4 \quad 23 \times 88$$

$$5 \quad 71 \times 49$$

$$6 \quad 62 \times 67$$

$$7 \quad 15 \times 38$$

Use an equation to solve.

- 8 An audio book is made up of 8 CDs. Each of the first 7 CDs is 42 minutes long and the final CD is 26 minutes long. Mark plans to listen to the book the same number of minutes for 8 days. How many minutes each day will Mark listen to the audio book?
- _____

- 9 **Stretch Your Thinking** A sign shows the price per pound for several bulk food items. Use the information to write a word problem that requires at least 3 steps to solve. Then solve your problem

Food Item	Cost per pound
mixed nuts	\$5
dried fruit	\$3
snack mix	\$7
wild rice	\$2
red lentils	\$4

4-10
Homework

Name _____

Date _____

List all the factor pairs for each number.

1 49

2 71

3 18

4 57

Write whether each number is *prime* or *composite*.

5 50

6 29

7 81

8 95

9 19

10 54

Tell whether 6 is a factor of each number. Write *yes* or *no*.

11 6

12 80

13 36

14 72

Tell whether each number is a multiple of 8. Write *yes* or *no*.

15 64

16 32

17 88

18 18

Use the rule to complete the pattern.

19 Rule: skip count by 11

11, 22, _____, _____, 55, _____, _____, 88, 99

20 Rule: skip count by 9

9, _____, 27, _____, 45, _____, 63, _____, 81, _____

21 Rule: skip count by 8

8, 16, 24, _____, _____, _____, _____, 64, 72, _____

Draw a rectangle model. Solve using any method that relates to the model.

① $8 \times 1,593$ _____

② $3 \times 6,247$ _____

Use the correct operation or combination of operations to solve the problem.

- ③ Melina has 4 sheets of wacky face stickers with 24 stickers on each sheet. Melina cuts each sticker individually from the sheet. She then divides them evenly into 3 piles to give to friends. How many stickers are in each pile?

Solve.

④ $5 \times 4 + 7 = g$ _____

⑤ $(3 \times 7) + (2 \times 10) = h$ _____

⑥ $16 - (5 \times 3) = m$ _____

⑦ $(9 - 3) \times (2 + 7) = l$ _____

⑧ $(12 - 8) + (3 \times 3) = p$ _____

⑨ $(24 \div 4) + 19 = t$ _____

- ⑩ **Stretch Your Thinking** Use *prime* or *composite* to complete the sentence. Then explain your choice.

All even numbers greater than 2 are _____.

Use the rule to find the next three terms in the pattern.

① 2, 6, 18, 54, ...

Rule: multiply by 3

② 115, 145, 175, 205, 235, ...

Rule: add 30

Use the rule to find the first ten terms in the pattern.

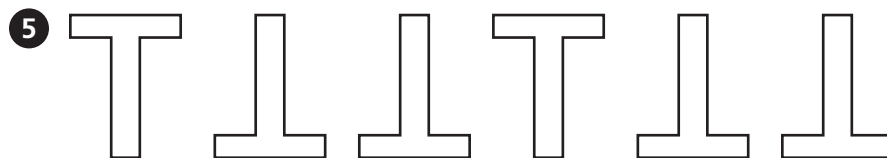
③ First term: 12

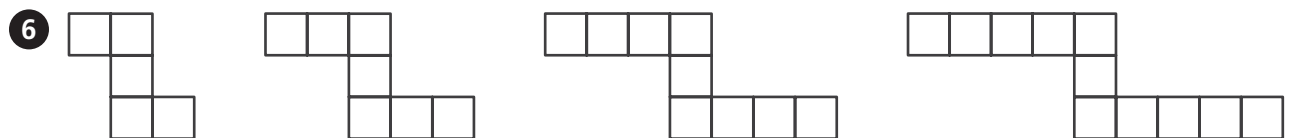
Rule: add 25

Make a table to solve.

- ④ Jay saves \$2 in June, \$4 in July, \$6 in August, and \$8 in September. If the pattern continues, how much money will Jay save in December?

Describe the next term of each pattern.





Subtract.

$$\begin{array}{r} \textcircled{1} \quad 491,562 \\ - 208,723 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad 392,119 \\ - 48,319 \\ \hline \end{array}$$

Solve.

Show your work.

- 3** Sid unpacks 8 cartons of paper clips. Each carton contains 3,500 paper clips. How many paper clips is this altogether?

- 4** Camille unpacks 102 boxes of red pens and 155 boxes of blue pens. Each box contains 8 pens. How many pens does she unpack altogether?

List all of the factor pairs for each number.

5 55 _____

6 14 _____

- 7 Stretch Your Thinking** During the first week of the year, Angelina's dad gives her \$10 and says that he will give her \$10 more each week for the rest of the year. At the end of the year, how much money will Angelina receive from her dad? (Hint: 1 year = 52 weeks) Make a table to show the pattern, and explain your answer.

- 1 Design the blank pot below by drawing a pattern that meets the following conditions.
- ▶ At least three different shapes are used.
 - ▶ The pattern begins with a square or a circle.
 - ▶ The pattern is repeated at least two times.
 - ▶ At least two different colors are used.



- 2 Describe your pattern.

- 3 Suppose 184 students from Wilson Middle School complete this page at home. If each student draws 9 shapes on his or her pot, how many shapes in all would be drawn?

Add or subtract.

$$\begin{array}{r} 1 \quad 8,500 \\ - 1,265 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 24,187 \\ - 14,856 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 683,519 \\ + 292,744 \\ \hline \end{array}$$

Solve using any method and show your work. Check your work with estimation.

$$\begin{array}{r} 4 \quad 19 \\ \times 82 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \quad 649 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad 2,934 \\ \times 8 \\ \hline \end{array}$$

Use the rule to find the next five terms in the pattern.

$$7 \quad 3, 6, 12, 24, \dots$$

Rule: multiply by 2

$$8 \quad 25, 60, 95, 130, \dots$$

Rule: add 35

Use the rule to find the first ten terms in the pattern.

$$9 \quad \text{First term: } 18$$

Rule: add 12

- 10 Stretch Your Thinking** For a cookie exchange, Kaiya bakes 2 pans of 12 chocolate chip cookies each, 3 pans of 16 lemon drops each, and 4 pans of 10 peanut butter cookies each. She is dividing the cookies into 8 tins, with an equal number of each type of cookie in each tin. How many of each type of cookie will be in each tin? How many cookies in all will be in each tin? Explain.
