5–1 Homework

Name _____ Date _____

1. Circle the expressions.

$3 \bullet x = 9$ $3 \bullet x + 9$ 13 $r = s + t$ $5 \bullet (m + 4)$ $36 \div f + 17$

2. Write an expression that consists of three terms.

_____

3. Write an expression that consists of two terms that are numbers.

_____

Simplify each expression by following the Order of Operations.

4. $18 - 12 \div 3$ _____

5. $4 \bullet (7 + 5)$ _____

6. $7 \bullet 5 + 5 \bullet 7$ _____

Order of Operations

1. Perform all operations inside parentheses.
2. Multiply and divide from left to right.
3. Add and subtract from left to right.

7. $6 \bullet (21 \div 7) + 12$ _____

8. $36 \div 3 \bullet 2$ _____

9. $(5 + 2) \bullet 6 \div 7$ _____

Evaluate each expression for $a = 4$ and $b = 5$.

10. $60 - 16 \div a$ _____

11. $2 + 6 \bullet b$ _____

12. $a \bullet (b + 5)$ _____

13. $b + (4 - a) \bullet 9$ _____

Name _____ Date _____

Remembering

1. Maria is knitting a scarf. So far the scarf has 21 rows of white and 27 rows of red. She continues to knit more rows in the same basic ratio. How many rows of red will the scarf have when it has 42 rows of white?

_____

Solve.

2. 3.4 • 0.21 _____

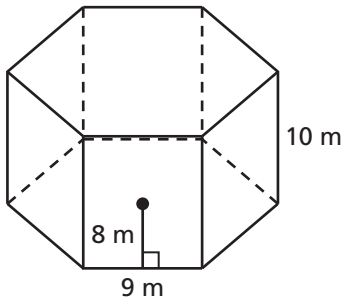
3. 233.1 ÷ 2.1 _____

4. 1,030 − 886 _____

5. 22.34 + 9.322 _____

The base of each three-dimensional figure is a regular polygon. Name the figure. Then find the surface area.

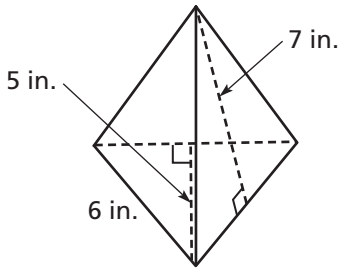
6.



_____

_____

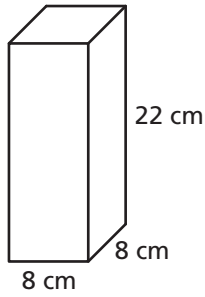
7.



_____

_____

8.



_____

_____

9. Stretch Your Thinking How can you place parentheses in the expression below to make it have a value 60? Explain.

2 • 6 + 6 + 3 • 2

_____

_____

_____

_____

5–2 Homework

Name _____ Date _____

Write each expression as a repeated multiplication.

1. $7^3 =$ _____

2. $9^3 \bullet 2^2 =$ _____

3. $v^4 =$ _____

4. $a^4 \bullet b^2 =$ _____

Use an exponent to write each repeated multiplication.

5. $6 \bullet 6 \bullet 6 \bullet 6 \bullet 6 =$ _____

6. $n \bullet n \bullet n =$ _____

7. $4 \bullet t \bullet t =$ _____

8. $d \bullet d \bullet d \bullet f =$ _____

Simplify. Follow the Order of Operations.

9. $30 - 4^2 =$ _____

10. $(6 + 2) \div 2^2 =$ _____

11. $3^3 \div 9 + 3 =$ _____

Evaluate the expression for $a = 2$ and $b = 5$.

12. $6 \bullet a^3$ _____

13. $b^2 \bullet (a + 3)$ _____

14. $(b + a)^2$ _____

15. Match the terms of the expression to parts of the figure.

$3^2 + 2^2$ dots

16. Match the terms of the expression to parts of the figure.

$5^2 - 2^2$ dots

17. Riley said that $4^5 = 20$. What mistake did Riley make? What does 4^5 mean?

_____

_____

5–2 Name Date

Remembering

1. At soccer practice, for every 5 minutes that Bob runs, he spends 20 minutes practicing dribbling. If Bob keeps the same ratio and he spends 36 minutes practicing dribbling, how many minutes does he spend running?

_____

2. Barb is making a banner that is shaped like a trapezoid. The height of the banner is 24 inches. The top of the banner is 14 inches. If the area of the banner is 372 $in.^2$, what is the length of the bottom side?

_____

3. Stephen is covering a box with felt. The box is in the shape of a rectangular prism. The height is 12 in. The length and width of the base are 5 in. and 6 in. How much felt does Stephen need to completely cover the box?

_____

Simplify each expression by following the order of operations.

4. $22 - 5 \bullet 3$ _____

5. $6 \bullet (5 + 12)$ _____

6. $16 + 45 \div 9$ _____

7. $5 \bullet 6 + 3 \bullet 4$ _____

Evaluate each expression for $n = 5$ and $m = 3$.

8. $m + 4 \bullet 7$ _____

9. $30 - n \bullet 4 + m$ _____

10. $7 + n \bullet m \div 5$ _____

11. $n + (7 - m) \bullet 8$ _____

12. Stretch Your Thinking Justine evaluated this expression for a certain value of s and got 13. What was the value of s? Explain.

$$15 + s \div 3 - 6$$

_____

_____

_____

5–3 Homework

Name _____ Date _____

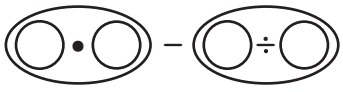
Complete the table.

	Algebraic Expression	Plus, Minus, Times, Divided by	Add, Subtract, Multiply, Divide	Sum, Difference, Product, Quotient
1.	_____	___ minus ___	Subtract *d* from 11.	_____ is a _____.
2.	$7 \bullet d$	7 _____ *d*	Multiply ___ and ___.	_____ is the _____ of ___ and ___.
3.	$7 \div d$	___ divided by ___	Divide ___ by ___.	_____ is a _____.

Analyze the expression. Then match the expression with the diagram that describes it.

4. $5 \bullet n^2 - 3$ ____ **5.** $3 \bullet n - 6 \div 5^2$ ____ **6.** $(3 + n) \bullet 5 + n^2$ ____

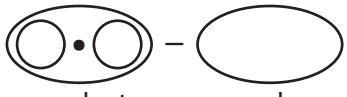
A.



product quotient

2 terms

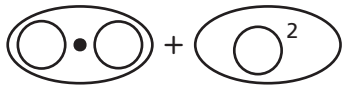
B.



product number

2 terms

C.



product power

2 terms

Analyze each expression. Then make a diagram to describe it.

7. $6 \bullet 7 + c$ **8.** $6 \bullet (7 + c)$ **9.** $c \div 7 - 6 \bullet c$

10. Evaluate $\frac{1}{2} \bullet a + 1$ for $a = 9$.

_____

5–3 Name Date

Remembering

Write equivalent fractions. Complete.

1.	$5\frac{2}{3}$ $3\frac{7}{10}$ →	
2.	>, <	
3.	+	
4.	−	
5.	•	
6.	÷	

Solve.

7. At *Buy It Here*, Katie can buy 4 cans of soup for $10. At *SuperMarket*, she can buy 18 cans of soup for $30. Katie wants to buy soup for the lowest possible price. At which store should she shop? Explain.

_____

_____

_____

_____

Write each expression as a repeated multiplication or with an exponent.

8. $5 \cdot r \cdot r \cdot r$ _____

9. $5^4 v$ _____

10. $u \cdot u \cdot u \cdot u \cdot u \cdot 4 \cdot 4$

_____

11. $b \cdot b \cdot y \cdot y \cdot y$ _____

Evaluate each expression for $p = 4$ and $q = 7$.

12. $2 \cdot p^2$ _____

13. $(p + q)^2$ _____

14. $2^3 \cdot p^2 \div 2$ _____

15. $q^2 - (p \cdot 5)$ _____

16. Stretch Your Thinking Maryanna drew this figure. Write an expression that represents the number of dots. Explain.

_____

_____

_____

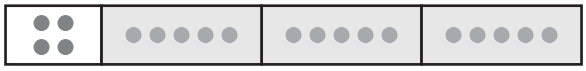
_____

5–4 Homework

Name _____ Date _____

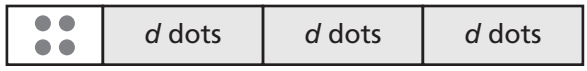
1. Analyze the expression. Then match parts of the expression with parts of the dot design.

$4 + 3 \bullet 5$



2. Analyze the expression. Then evaluate it for $d = 7$.

$4 + 3 \bullet d$ _____



3. Analyze and simplify each expression. Put checkmarks next to the expressions with the same value.

$2 + 4 \bullet 3$ _____ $2 + (4 \bullet 3)$ _____ $(2 + 4) \bullet 3$ _____

Write each word expression as an algebraic expression.

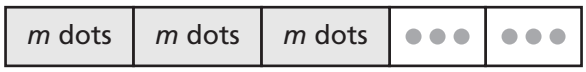
4. the product of $\frac{1}{3}$ and a _____

5. Divide a by 3. _____

6. Subtract $\frac{1}{3}$ from b. _____

Write an expression for the number of dots. Then analyze the expression and evaluate or simplify it.

7.



Write an expression and analyze it.

_____

Evaluate the expression for $m = 5$.

_____

8.

Write an expression and analyze it.

_____

Simplify the expression.

_____

Analyze the expression. Then draw a diagram for the expression.

9. $4 \bullet 6 - 3$

10. $3 \bullet (2 + 5) + 4$

Name _____ Date _____

Remembering

1. For a field trip, 4 chaperones are needed for every 18 students. How many chaperones are needed if there are 81 students going on the trip?

_____

2. The base of a prism is a regular hexagon with a perimeter of 78 mm. The height of the prism is 16 mm. What is the area of one of the rectangular faces of the prism?

_____

Solve.

3. $\frac{6}{7} + \frac{1}{2}$ _____

4. $5.6 \bullet 0.21$ _____

5. $3.012 \div 6$ _____

6. $\frac{1}{3} \bullet \frac{2}{3}$ _____

7. $1{,}330 + 2{,}391$ _____

8. $\frac{3}{5} - \frac{1}{4}$ _____

9. $67 \div 12$ _____

10. $2\frac{1}{5} - 1\frac{3}{8}$ _____

Evaluate each expression for $h = 2$ and $r = 3$.

11. $4 \bullet h^2 + r$ _____

12. $r + 16 \div 2 + h$ _____

13. $h \bullet (6 + r)^2$ _____

14. $h \bullet (r - 1) \bullet 12$ _____

Write an expression for each phrase.

15. subtract 6 from y _____

16. the product of 8 and g _____

17. divide 45 by x _____

18. the sum of 15 and d _____

19. Stretch Your Thinking Jackie evaluated these expressions for a value for c and got the same number. What could be the value of c? Explain.

$$40 - c^2 \bullet 7 + 2 \bullet c$$

and

$$40 - 2 \bullet c \bullet 7 + c^2$$

_____

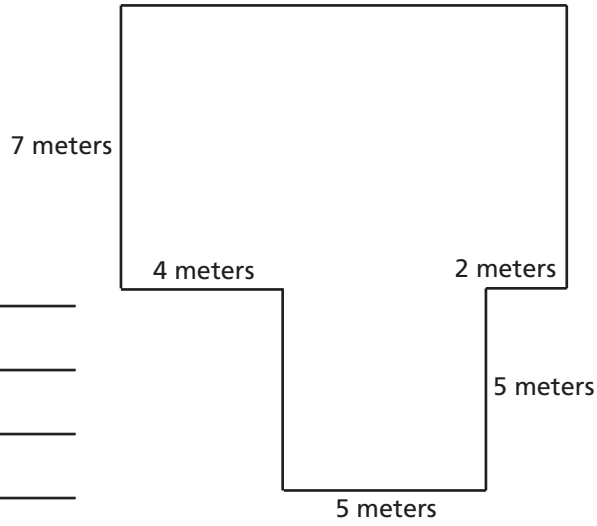
_____

_____

5–5 Homework

Name _____ Date _____

Consider the floor plan shown at the right. (All the angles are right angles.)



1. One expression for the area is given below. Analyze the expression and explain how it relates to the drawing.

$12 \bullet 11 - 4 \bullet 5 - 2 \bullet 5$ m^2

_____

_____

_____

_____

2. Write a different expression for the area.

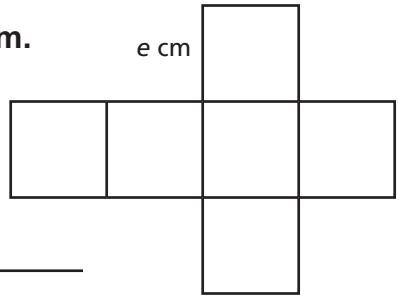
_____

3. Explain how your expression from Exercise 2 relates to the drawing.

_____

_____

At the right is the net for a cube with edges of length *e* cm. One expression for the surface area of the cube is $6 \bullet e^2$.



4. Where does the 6 in the area expression come from?

_____

5. Where does the e^2 come from?

_____

6. Write another expression for the surface area of the cube.

_____

7. How much paper would it take to cover a cube with edges 2.5 centimeters long?

_____

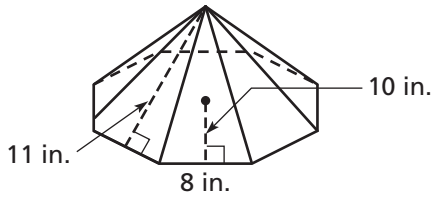
Name _____ Date _____

Remembering

1. Matt saves the same amount each week. At the end of 3 weeks, he has $12. How many weeks will it take him to save $36?

_____

2. Jose made a candle in the shape shown. What is the surface area of the candle?



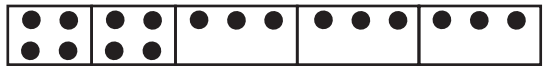
_____

Write an expression for the phrase or number of dots. Then, when possible, evaluate the expression for $k = 12$.

3.

_____

4.



_____

5.

_____

6.

_____

7. Divide k by 4.

_____

8. Subtract $3\frac{4}{5}$ from k.

_____

9. Stretch Your Thinking Make a diagram for the expression $4 \bullet (n + 4)$. Explain how your diagram shows the expression.

_____

_____

_____

5–6 Homework

Name _____ Date _____

Write two expressions that are equivalent to each expression.

1. $3f$ _____

2. $4 \bullet g$ _____

3. $h + h$ _____

4. Describe a situation and make a diagram for the expression $2a + a$.

Situation **Diagram**

_____

_____

_____

_____

5. Circle the expressions that are equivalent to $2a + a$.

$2 \bullet a + 1 \bullet a$ $a + a + a$ $a + 2a$ $3a$ $2 + 2a$

6. Circle the expressions that are equivalent to $4b - 4$.

$4 \bullet b - 4$ $(4 \bullet b) - 4$ b $b + b + b + b - 4$ $(4 + b) - 4$

7. Make a diagram and write an equivalent expression for $1 + 2 + h$.

Diagram **Expression**

5–6 Name Date

Remembering

1. June and her brother Jason both read for the same amount of time at their own constant rates. When June has read 35 pages, Jason has read 42 pages. How many pages will June have read when Jason has read 48 pages?

_____

Evaluate each expression for $a = 3$ and $b = 4$.

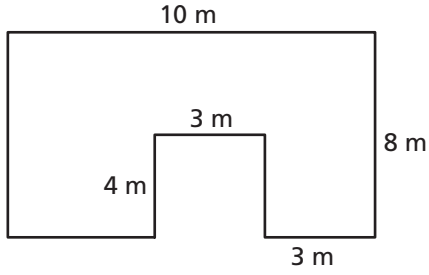
2. $5 \bullet b^2 + (2 \bullet a + 2)$ _____

3. $(b + a)^2 - 12 + a$ _____

4. $64 \div b \bullet a$ _____

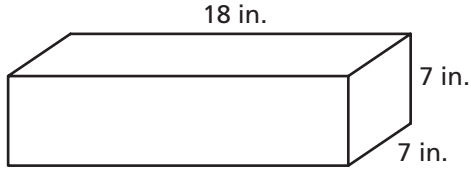
5. $a^2 - b + 5 \bullet a$ _____

6. Write two expressions to find the area of the figure at the right. Then use the expressions to find the area.



_____

7. Write two expressions to find the surface area of the figure at the right. Then use the expressions to find the surface area.



_____

8. Stretch Your Thinking Write an expression to show the surface area of a rectangular prism with length, l, width, w, and height, h. Now double the dimensions of the prism. Write a new expression to show the surface area of the larger prism. Explain how your expressions show the measurements.

_____

_____

_____

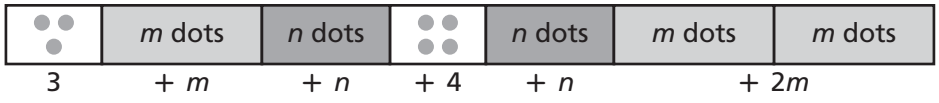
_____

_____

5–7 Homework

Name _____ Date _____

1. Use the diagram to help you combine like terms and find an equivalent expression that is simpler.



$3 + m + n + 4 + n + 2m =$ _____

Simplify each expression by combining like terms.

2. $4x + 5 + x + 3 =$ _____

3. $2a + 2b + 3a + 5 - b - 3 =$ _____

4. $10 + 4y + 5 + 6y =$ _____

5. $6 + 8x + 5y + 2 + x =$ _____

6. $4 + w^2 + 5 + w^2 =$ _____

7. $3c^2 + 1 + c^2 =$ _____

Rewrite the term so the coefficient is in front.

8. $(3x)8 =$ _____
coefficient: _____

9. $(4y)2y =$ _____
coefficient: _____

10. $(4p)(3q) =$ _____
coefficient: _____

11. There are 10 boxes. Each box has 4 six-packs of juice. Each six-pack has 6 bottles.

Explain why the expression (10 • 4) • 6 represents the total number of bottles of juice.

_____

_____

Simplify (10 • 4) • 6. _____

Explain why the expression 10 • (4 • 6) represents the total number of bottles of juice.

_____

_____

Simplify 10 • (4 • 6) _____

Name _____ Date _____

Remembering

Solve.

1. The ratio of width to length of Baily's television screen is 3:4. What is the width of the screen if the length is 32 inches?

_____

2. Erin is painting a block the shape of a square pyramid. The length of one side of the base of the pyramid is 8 in. The height of one of the triangular sides of the pyramid is 12.3 in. How much area does Erin need to cover with paint?

_____

Write equivalent fractions. Complete.

3.	$5\frac{3}{8}$ $4\frac{3}{4}$ →	
4.	>, <	
5.	+	
6.	−	
7.	•	
8.	÷	

Write two expressions that are equivalent to each expression.

9. $5t$ _____

10. $k + k + k$ _____

11. $y + y + y + y - 4$ _____

12. $10 + 3 \bullet d$ _____

13. Circle the expressions that are equivalent to $3r - 3$.

$2r$ $r + r + r - 3$ r $(3 \bullet r) - 3$ $2r + r - 3$

14. Stretch Your Thinking Decide if the expressions $4 + (5 \bullet t)$ and $2 + 2 + t + t + 3t$ are equivalent. Then find the value of each expression if $t = 3$. Explain your results.

_____

_____

_____

_____

_____

_____

_____

5–8 Homework

Name _____ Date _____

Use the Distributive Property to write an equivalent expression.

1. $x(x + 3) =$ _____

2. $4y + 7y =$ _____

3. $(y - 2)x =$ _____

4. $12(x + 5) =$ _____

5. $3x - 6 =$ _____

6. $(4x - 1)x =$ _____

7. $y \bullet 3 + z \bullet 3 =$ _____

8. $xy + xz =$ _____

Write each sum as a product by using the Distributive Property to pull out the greatest common factor. Show all your steps.

Example: $56 + 63 = 7 \bullet 8 + 7 \bullet 9 = 7(8 + 9) = 7 \bullet 17$

9. $48 + 42 =$ _____ • _____ + _____ • _____ = _____ = _____

10. $35 + 15 =$ _____ • _____ + _____ • _____ = _____ = _____

Tell whether the expressions are equivalent.

11. $4(xy)$ and $(4x)(4y)$ _____

12. $9 + 2(x + y)$ and $9 + 2x + 2y$ _____

13. $2 + 2m + 3$ and $2m + 5$ _____

14. $2 + 2m + 3$ and $2(1 + m) + 3$ _____

15. $2 + 2m + 3$ and $4m + 3$ _____

16. $(4 + x) + (4 + y)$ and $4(x + y)$ _____

Rewrite the term so the coefficient is in front.

17. $(2x)5x =$ _____
coefficient: _____

18. $(3y)2 =$ _____
coefficient: _____

19. $(6j)(5k) =$ _____
coefficient: _____

Name _____ Date _____

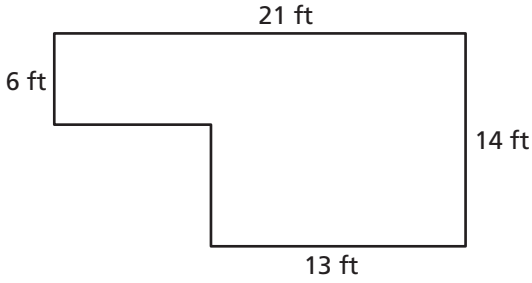
Remembering

1. Kendra is buying notebooks for school. The table shows 4 different notebooks and their prices. If Kendra wants to buy 16 notebooks at the least expensive price, which notebook should she buy?

Cost of Notebooks	
Notebook A	4 for $6
Notebook B	16 for $24
Notebook C	8 for $10
Notebook D	1 for $5

_____

2. Mario is covering the room shown at the right with carpeting. Write an expression that can be used to find the amount of carpeting he needs. Then use the expression to find the amount of carpeting he needs.



_____

Simplify each expression by combining like terms.

3. $6x + 10 - x + 9$

_____

4. $10 + 5f + 6 + 2f - 9$

_____

5. $m^2 + 12 + 3m^2 + 5n + 3 - n$

_____

6. $3w + 4u + 9 + 2w + 5u + 1$

_____

Rewrite the term so the coefficient is in front.

7. $(9r)2$ _____

8. $8e(7e)t$ _____

9. $(3p)(8s)$ _____

10. Stretch Your Thinking The diagram shows $4 \bullet (m \bullet 3)$. Change the diagram so that it shows $(4 \bullet m) \bullet 3$. How do the diagrams show that $4 \bullet (m \bullet 3) = (4 \bullet m) \bullet 3 = 12m$?

m dots	*m* dots	*m* dots	*m* dots
m dots	*m* dots	*m* dots	*m* dots
m dots	*m* dots	*m* dots	*m* dots

_____

_____

_____

_____

Name _____ Date _____

1. Ms. Williams brought 7 boxes of m markers to school.
At the end of the school day 3 markers were missing.

Write an expression for the number of markers that were left.

_____

Evaluate your expression for $m = 12$.

_____ markers

Apply the Distributive Property to write an equivalent expression.

2. $6s - 42 =$ _____

3. $9(t + 8) =$ _____

4. $5p + 2p =$ _____

5. $m(3 - m) =$ _____

Tell whether the expressions are equivalent.

6. $(4a)(4b)$ and $16ab$ _____

7. $2m + 2 + 3m$ and $5m + 2$ _____

8. $4 + 7(x + y)$ and $4 + 7x + y$ _____

9. $4x^2$ and $(2x)(2x)$ _____

Simplify each expression. Be sure to do the following:

- **Do all the computations you can.**
- **Write each term with the coefficient in front.**
- **Combine like terms.**

10. $2^2 + x + 3^2 + x =$ _____

11. $5a + 5b + 2a + 3b =$ _____

12. $4 \bullet 5 + 3(2x) + 5x + 3 =$ _____

13. $(5m)5 + 2m + 5(6m) =$ _____

5–9

Name _____ Date _____

Remembering

1. Michelle and Matthew bake carrot cake at their bakery. For every 9 cups of shredded carrots they use, they use 6 cups of sugar. How many cups of shredded carrots will they use if they use 14 cups of sugar?

_____

Solve.

2. 15 • 3.4 _____

3. 2,444 + 703 _____

4. 105.84 ÷ 2.4 _____

5. 2.031 + 0.978 _____

6. 1.12 • 0.3 _____

7. 3,024 ÷ 56 _____

8. 9.1 − 1.02 _____

9. 48.45 ÷ 9.5 _____

Tell if the expressions are equivalent.

10. $2x + 3x + 7$ and $6x^2 + 7$ _____

11. $4 + 4u + 8$ and $4(1 + u + 2)$ _____

12. $4m - 4 + 3$ and $4(m - 1) + 3$ _____

13. $(5 + b) + (5 + g)$ and $5(b + g)$ _____

Use the Distributive Property to write an equivalent expression.

14. $y(u + 7)$ _____

15. $24 + 12s + 12r$ _____

16. $5t + 6t + tm$ _____

17. $7(u + 4 + h)$ _____

18. Stretch Your Thinking Explain how you can use the Distributive Property to find 25 • 43.

_____

_____

_____

_____

Name _____ Date _____

Maria and Juan are sister and brother. Maria is 2 years older than Juan.

1. Define the variables for Maria's and Juan's ages.

Let m be _____

Let j be _____

2. Fill in the table, make a diagram, and write equations to relate m and j.

Table

j	m

Diagram

Equations

$m =$ _____

$j =$ _____

Write the expression that matches the description.

3. Subtract x from 4. _____

4. Multiply 3 times p and then add 10 to the result. _____

5. Divide 12 by the sum of x and 9. _____

6. Subtract 7 from s and then multiply the result by 6. _____

Apply the Distributive Property to all or part of the expression to write an equivalent expression.

7. $d(d - 1) =$ _____

8. $15x + 10 =$ _____

9. $(6m - 7)6 =$ _____

10. $4(a + 3) + c =$ _____

11. $3 + 7y + 5y =$ _____

12. $2x + 3x^2 =$ _____

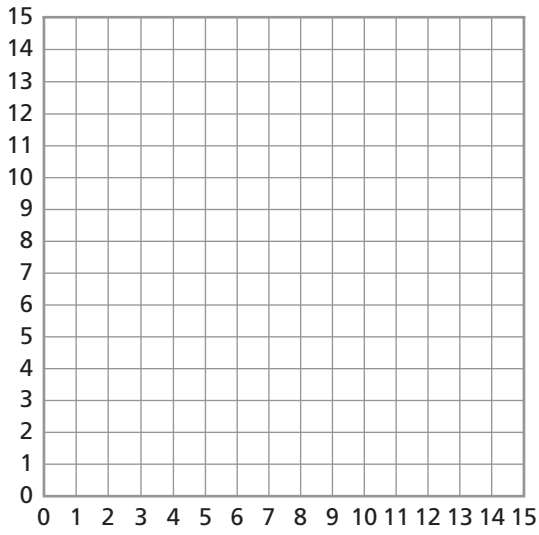
Name _____ Date _____

Remembering

1. Benny is writing a report. For every 7 paragraphs, he uses 4 pieces of art. How many pieces of art will Benny use if his report is 56 paragraphs long?

_____

2. On the grid at the right, plot these ordered pairs: $A(1, 2)$, $B(9, 2)$, $C(14, 14)$. Plot point D and draw lines to form parallelogram $ABCD$. Segment AD is 13 units long. Find the perimeter and area of parallelogram $ABCD$.



$P =$ _____

$A =$ _____

Evaluate the expression for $n = 4$ and $t = 2$.

3. $6n + 16 + t \bullet (2 + n)$ _____

4. $n \bullet (5 + 12) - n^2 + t$ _____

5. $6 + n^2 \bullet 7 - 12 \div t$ _____

6. $t + 48 \div 4 - n \bullet t$ _____

Simplify each expression.

7. $v + 3^2 + 3v - 4$

_____

8. $5b + 7a + 15 - a + 2b - 10$

_____

9. $4m(8) + 4m + 16 \bullet 2 - 3m$

_____

10. $7(2j + 5) - 12 + 6j$

_____

11. Stretch Your Thinking Malia used the Distributive Property when she simplified an expression. The simplified expression was $4 + 3a + 17m$. What could have been the original expression? Explain.

_____

_____

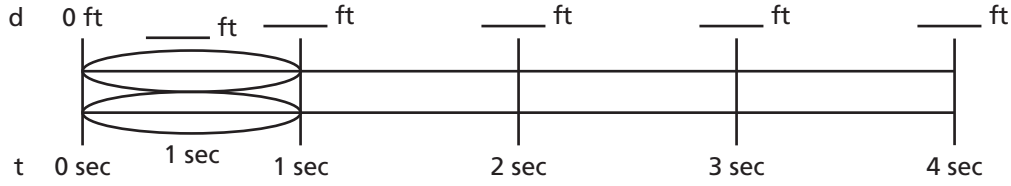
_____

5–11 Homework

Name _____ Date _____

A student walks at a constant rate of 9 feet every 2 seconds.

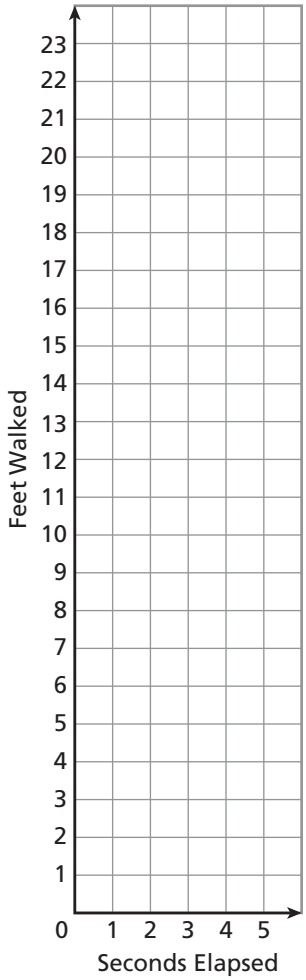
1. Label a double number line for the student.



2. Complete the table for the student's walk.

Seconds Elapsed	Feet Walked
0	
1	
2	
3	
4	
5	
t	*d*

3. Graph the data from the table. Draw two unit rate triangles on the graph.



4. Write an equation relating seconds elapsed *t* and feet walked *d*.

_____

Tell how far the student walks in the given amount of time.

5. $1\frac{1}{2}$ seconds _____

6. $3\frac{2}{3}$ seconds _____

7. Another student walks at a rate of 6 feet per second. Write an equation relating seconds elapsed *t* and feet walked *d*.

_____

Name _____ Date _____

Remembering

Solve.

1. Sarah is beading necklaces. For every 63 seed beads she uses, she uses 7 glass beads. How many seed beads would she use if she uses 9 glass beads?

_____

2. George is painting the outside faces of a box shaped like a rectangular prism. The dimensions of the box are 4 in. by 5 in. by 6 in. How many square inches does George paint?

_____

Write equivalent fractions. Complete.

3.	$4\frac{2}{5}$ $3\frac{2}{3}$ $\rightarrow$	
4.	$>, <$	
5.	$+$	
6.	$-$	
7.	$\bullet$	
8.	$\div$	

Josi's dog eats 2 cups of food a day.

9. Complete the table to relate *d*, the number of days and *c*, the cups of food Josi's dog eats.

days, *d*	cups of food, *c*
1	
12	

10. Make a diagram to relate *d* and *c*.

11. Write equations to relate *d* and *c*.

c = _____ *d* = _____

12. Stretch Your Thinking Keni and Bea are writing expressions for *6 more than 8 times 2*. Keni writes $(8 + 6) \bullet 2$. Bea writes $8 \bullet 2 + 6$. Is it possible to determine which expression is correct? Explain.

_____

_____

Name Date

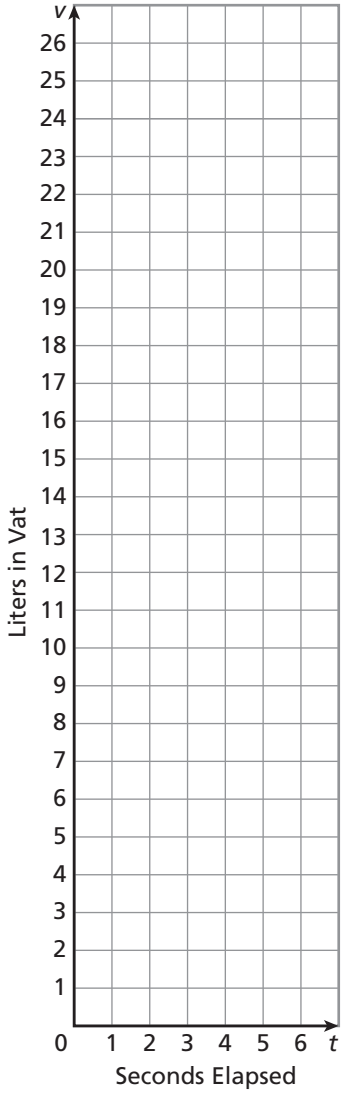
SuperHero Supplies, Inc. makes a Tall-Building-Leaping Superpower soup. In the equation below, t is the elapsed time in seconds, and v is the number of liters of soup in the vat at the factory.

$$v = 4t + 2$$

1. Complete the table.

$$\boldsymbol{v = 4t + 2}$$

Seconds Elapsed, t	Liters in Vat, v
0	
1	
2	
3	
4	
5	
6	



2. Plot the points from the table. Connect the points if it makes sense to.

3. Is the soup flowing at a constant rate? Explain how you found your answer.

4. What does the 4 in $v = 4t + 2$ tell you about this situation?

5. What does the 2 in $v = 4t + 2$ tell you about this situation?

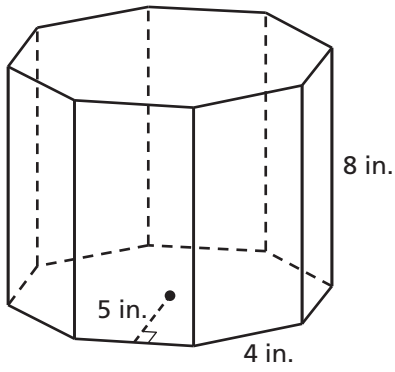
Name _____ Date _____

Remembering

1. For every $10 that Josephine earns, she spends $8. How much will she spend if she earns $35?

_____

2. Sari is covering the top, bottom, and sides of this jewelry box with cloth. The top and bottom of the box are regular octagons. Write an expression that you can use to find the number of square inches of cloth Sari needs to use. Then use the expression to find the answer.



_____

Use the Distributive Property to write an equivalent expression.

3. $4(9m + 6b + 4) + r$

_____

4. $8tr + 10t + 14t^2 + 13$

_____

5. $3m + 2t - 10r - 7$

_____

6. $4y + 2x(5y + 12) + y^2$

_____

A craft store sells two T-shirts for $11.

7. Complete the table to show the cost of shirts.

number of shirts, n	total cost ($), t
1	
2	
3	
4	

8. Write an equation relating the number of shirts, n, and the total cost in dollars, t.

$t =$ _____

9. How much does it cost to buy 15 shirts? _____

10. Stretch Your Thinking Jerry buys 12 shirts for $69 at a clothing store. Write an equation to show the total cost in dollars, t, of n shirts at the clothing store. Compare your equation to the equation in Exercise 8. How do the equations show which store sells T-shirts at a less expensive price? Explain.

_____

_____

Name _____ Date _____

Seward Elementary School is also considering buying bracelets from a fourth company.

Company D charges $3 for 20 bracelets, plus $2 for shipping.

1. How much does 1 bracelet cost, not including the shipping charge? Show your work.

_____

2. How much do n bracelets cost, not including the shipping charge?

_____

3. Let n be the number of bracelets the school buys, and let t be the total cost in dollars of the bracelets, including the shipping cost. Write an equation relating t and n.

$t =$ _____

4. Explain what each term on the right side of the equation tells about this situation.

_____

_____

_____

5. The cost equation for Company A is $t = 0.125n + 4$

Does Company A or Company D offer the better price if the school buys 50 bracelets?

_____

Does Company A or Company D offer the better price if the school buys 200 bracelets?

_____

Name _____ Date _____

Remembering

1. It takes Cheryl 16 minutes to upload 20 music files. At this rate, how many files can Cheryl upload in 40 minutes?

_____

Simplify.

2. 4.56 + 3.09 _____

3. 67.2 ÷ 21 _____

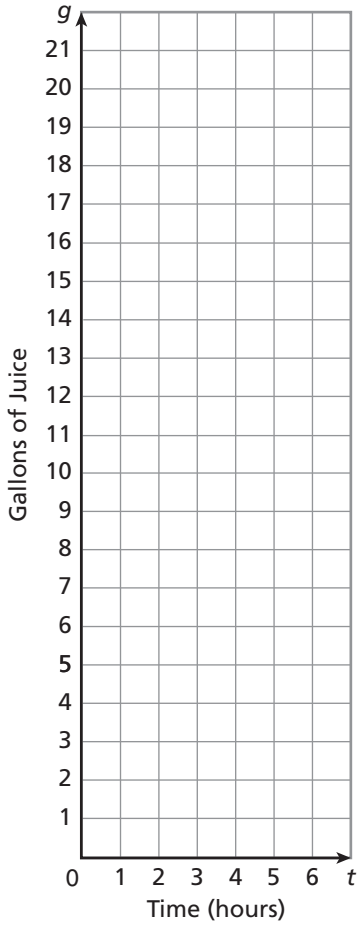
4. 405.4 − 65 _____

The equation below shows how Mandy decides how much juice to buy for a party. In the equation, *g* is the number of gallons of juice she buys, and *t* is the length of the party in hours.

$$g = 3t + 5$$

5. Complete the table.

hours, *t*	gallons, *g*
1	
2	
3	
4	
5	



6. Plot the points from the table. Connect the points if it makes sense to do so.

7. Stretch Your Thinking Look at the equation above that models the amount of juice that Mandy buys for a party. What could the 3 in the equation tell you about the situation? What could the 5 tell you? Explain.

_____

_____

_____

5–14

Homework

Name _____ Date _____

Write each statement as an inequality.

1. 10 minus 7 is less than 5. _____

2. m is greater than or equal to 25. _____

Write each inequality in words.

3. $8 > 25 \div 5$ _____

4. $9 + 5 < j$ _____

Give three solutions to each inequality.

5. $y < 11$

_____

6. $p \geq 100$

_____

7. $3 \bullet c \geq 18$

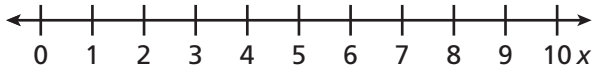
_____

8. $v + 3 > 6$

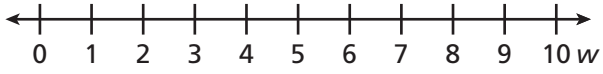
_____

Graph all the solutions of the inequality.

9. $x \leq 2$



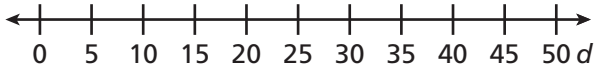
10. $w > 6$



11. Customers who spend $25 or more get free shipping. Let d represent the amount spent by a customer who gets free shipping. Write an inequality to show the possible values of d.

_____

Graph the inequality to show all the possible amounts a customer who gets free shipping might spend.



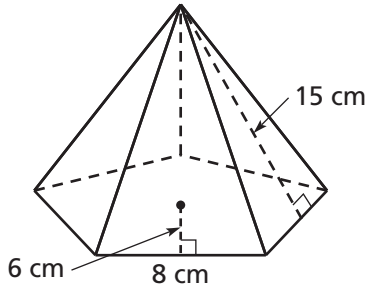
Name _____ Date _____

Remembering

1. Julian needs 20 boards to build 8 bookcases. How many bookcases can he build if he has 10 boards?

_____

2. Gerry makes a candle shaped like the pyramid shown. The base is a regular pentagon. He paints the outside surfaces of the candle with shimmering paint. How many square centimeters does he cover with paint?



_____

Complete the equation to model the problem. Use the equation to solve the problem.

3. The fifth grade field trip costs $25 per person. What equation relates the total amount for the field trip, *t,* with the number of students going, *s*? How much is the field trip if 35 students go?

$t =$ _____

4. Jenna is having a sidewalk sale. She pays $12 for a permit. She collects $1.50 for every item she sells. What equation relates the total amount she makes at the sale, *p*, and the number of items she sells, *i*? How much would Jenna make if she sells 25 items?

$p =$ _____

5. **Stretch Your Thinking** Look at the situation in Exercise 4. Suppose at a second sale Jenna pays $15 for a permit and sells each item for $1.75. If she sells 30 items at each sale, at which sale does she make more money? Explain.

_____

_____

_____

_____

Name _____ Date _____

Consider these equation and inequalities:

$\frac{2}{3}x = \frac{1}{3}x + \frac{1}{4}$ $\frac{2}{3}x < \frac{1}{3}x + \frac{1}{4}$ $\frac{2}{3}x > \frac{1}{3}x + \frac{1}{4}$

1. Evaluate $\frac{2}{3}x$ for $x = \frac{1}{2}$.

_____

Evaluate $\frac{1}{3}x + \frac{1}{4}$ for $x = \frac{1}{2}$.

_____

Tell whether $x = \frac{1}{2}$ is a solution of the equation or inequality.

$\frac{2}{3}x = \frac{1}{3}x + \frac{1}{4}$ _____

$\frac{2}{3}x < \frac{1}{3}x + \frac{1}{4}$ _____

$\frac{2}{3}x > \frac{1}{3}x + \frac{1}{4}$ _____

2. Evaluate $\frac{2}{3}x$ for $x = \frac{3}{4}$.

_____

Evaluate $\frac{1}{3}x + \frac{1}{4}$ for $x = \frac{3}{4}$.

_____

Tell whether $x = \frac{3}{4}$ is a solution of the equation or inequality.

$\frac{2}{3}x = \frac{1}{3}x + \frac{1}{4}$ _____

$\frac{2}{3}x < \frac{1}{3}x + \frac{1}{4}$ _____

$\frac{2}{3}x > \frac{1}{3}x + \frac{1}{4}$ _____

3. Evaluate $\frac{2}{3}x$ for $x = 2$.

_____

Evaluate $\frac{1}{3}x + \frac{1}{4}$ for $x = 2$.

_____

Tell whether $x = 2$ is a solution of the equation or inequality.

$\frac{2}{3}x = \frac{1}{3}x + \frac{1}{4}$ _____

$\frac{2}{3}x < \frac{1}{3}x + \frac{1}{4}$ _____

$\frac{2}{3}x > \frac{1}{3}x + \frac{1}{4}$ _____

Solve the equation by thinking about what value of *x* will make the sides equal.

4. $3x + 94 = 21 + 94$

$x =$ _____

5. $7(x - 19) = 7 \bullet 3$

$x =$ _____

6. $145 \div 5 = (x + 8) \div 5$

$x =$ _____

5–15

Name _____ Date _____

Remembering

1. Anna fits 22 glass figures on 4 shelves. How many shelves does she need to fit 77 glass figures?

_____

Simplify.

2. 35 • 9 _____

3. 2,431 − 1,944 _____

4. 91 • 3.1 _____

5. 67.76 ÷ 1.4 _____

6. 344 + 12.5 _____

7. 378 ÷ 56 _____

8. 10.2 − 4.21 _____

9. 204 + 3,994 _____

Write each statement as an inequality. Then give three solutions of the inequality.

10. 7 minus 5 is less than *x.*

_____

_____

11. 8 is greater than or equal to *u.*

_____

_____

12. *h* is greater than 5 times 8.

_____

_____

13. *p* times 7 is less than or equal to 63.

_____

_____

14. Stretch Your Thinking Johnny wrote these two inequalities:

$t < 25$ and $t \geq 6 \cdot 4$.

What could be a value of *t*? Explain.

_____

_____

Name _____ Date _____

Use an inverse operation to write a related equation. Then solve the equation for *x*.

1. $x - 8 = 2$ _____

2. $x + 6 = 15$ _____

3. $x + 4 = 5$ _____

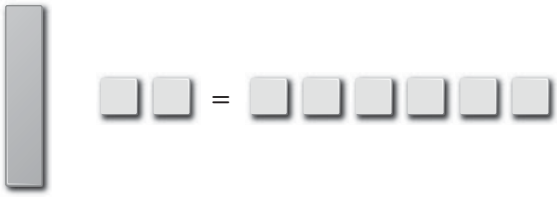
4. $x - 13 = 6$ _____

5. $x - 21 = 7$ _____

6. $x + 14 = 34$ _____

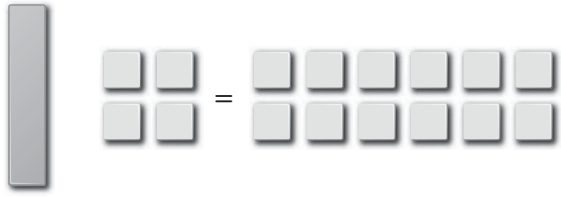
Write and solve the equation each model represents. Circle the tiles you remove from both sides.

7.



_____ $x =$ _____

8.



_____ $x =$ _____

Solve each equation using any method you choose. Use substitution to check your answer.

9. $x - 5 = 4$ $x =$ _____

10. $x + 2 = 9$ $x =$ _____

11. $x - 39 = 23$ $x =$ _____

12. $x + 98 = 174$ $x =$ _____

13. $x + 10 = 12$ $x =$ _____

14. $x - 2.6 = 4$ $x =$ _____

15. $x - \frac{2}{3} = 3\frac{1}{3}$ $x =$ _____

16. $x + \frac{2}{3} = 5$ $x =$ _____

Name _____ Date _____

Remembering

1. Michelle uses 3 cups of raisins for 2 batches of cookies. How many cups of raisins does she use for 8 batches?

_____

Evaluate each expression if $u = 5$ and $v = 6$.

2. $5 \bullet (u + v) - 12$

_____

3. $\frac{1}{2} \bullet u + 16 \div v$

_____

4. $\frac{2}{3}v + \frac{1}{4}u$

_____

5. $\frac{4}{5}(u + 3) - v$

_____

6. Evaluate $\frac{1}{6}x + \frac{1}{2}$ for $x = \frac{1}{2}$.

_____

Evaluate $1\frac{2}{3}x$ for $x = \frac{1}{2}$.

_____

Is $x = \frac{1}{2}$ a solution of

$\frac{1}{6}x + \frac{1}{2} = 1\frac{2}{3}x$? _____

$\frac{1}{6}x + \frac{1}{2} < 1\frac{2}{3}x$? _____

$\frac{1}{6}x + \frac{1}{2} > 1\frac{2}{3}x$? _____

Solve the equation by thinking about what value of *m* will make both sides of the equation equal.

7. $4 \bullet 6 = 4(m + 4)$

$m =$ _____

8. $17 + 2m = 17 + 28$

$m =$ _____

9. $132 \div 2 = (m \bullet 12) \div 2$

$m =$ _____

10. Stretch Your Thinking Loretta solved the equation $5s + 10 = 10 + 60$ by thinking about what value of s makes the expressions on each side of the equation equivalent. What was Loretta's value for s? Explain.

_____

_____

5–17

Homework

Name _____ Date _____

Use an inverse operation to write a related equation. Then solve the equation for *x*.

1. $x \div 7 = 5$

_____

2. $8x = 40$

_____

3. $x \div 4 = 6$

_____

4. $9x = 63$

_____

5. $x \div 2 = 13$

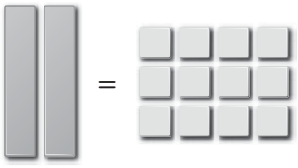
_____

6. $10x = 50$

_____

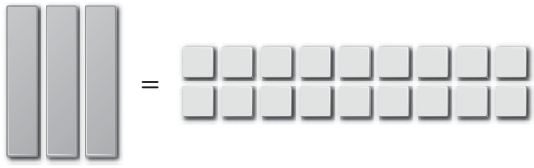
Write and solve the equation each model represents.

7.



_____

8.



_____

Solve each equation using any method. Use substitution to check your answer.

9. $12x = 84$ $x =$ _____

10. $x \div 8 = 16$ $x =$ _____

11. $\frac{1}{5}x = 30$ $x =$ _____

12. $2.5x = 20$ $x =$ _____

13. $\frac{x}{6} = 6$ $x =$ _____

14. $\frac{5}{6}x = 5$ $x =$ _____

15. $3x = 22.5$ $x =$ _____

16. $\frac{x}{4} = 17$ $x =$ _____

Name _____ Date _____

Remembering

Solve.

1. Bonnie buys yarn to use to crochet. At the first store, she can buy 8 packages for $10. At a second store she can buy 32 of the same size packages for $44. Which store has the less expensive price?

_____

Write equivalent fractions. Complete.

2.	$\frac{5}{12}$ $\frac{3}{8}$ $\rightarrow$	
3.	$>, <$	
4.	$+$	
5.	$-$	
6.	$\bullet$	
7.	$\div$	

Simplify each expression.

8. $12e + 37 + 5(e - 6) + 2$

_____

9. $\frac{1}{2}(12 + n) + 4n - 3$

_____

10. $g(12 + g) - 9g - 17$

_____

11. $2y(3y) + 16(y + 2) - 10$

_____

Solve each equation.

12. $16 = 4 + p$ $p =$ _____

13. $r - 3.4 = 10.7$ $r =$ _____

14. $x + 2\frac{2}{5} = 10\frac{1}{2}$ $x =$ _____

15. $y - 10.2 = 6$ $y =$ _____

16. $u - 5\frac{1}{6} = 8$ $u =$ _____

17. $18 = k + 12$ $k =$ _____

18. Stretch Your Thinking Use addition to write an equation that you can use to find the perimeter, P, of a rectangle with length 6 m and width 14.6 m. Then use the equation to find the perimeter.

_____

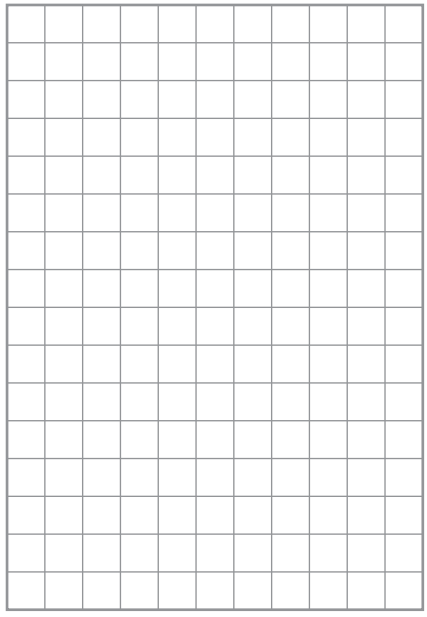
5–18

Homework

Name _____ Date _____

The table below illustrates the cost of a taxi ride for various distances. The total cost includes a fixed $5 initial charge, and a cost for every one-tenth of a mile traveled.

Cost of a Taxi Ride			
Distance in Miles (*d*)	Mileage Cost in Dollars	Initial Charge in Dollars	Total Cost in Dollars (*t*)
$\frac{1}{10}$	1	5	6
$\frac{1}{5}$			
$\frac{1}{2}$			
$\frac{7}{10}$			
1			



Solve.

1. One cost is the initial charge in dollars. What is the other cost?

_____

_____

2. Complete the table.

3. Graph the data for distance and total cost.

4. Write an equation that can be used to find the total cost in dollars (*t*) of a ride for any distance in miles (*d*).

_____

5. Predict the cost of a $2\frac{1}{2}$ mile ride. Use the equation you wrote in Exercise 4 to check your prediction.

_____

Name _____ Date _____

Remembering

1. During a week, for every 2 miles that Leigh runs, she walks 3 miles. How many miles will Leigh walk if she runs 10 miles?

_____

Simplify.

2. 6.56 ÷ 16

_____

3. 72 • 14

_____

4. 809 + 1.2

_____

5. 7,125 − 2,034

_____

6. 0.34 • 0.2

_____

7. 0.729 ÷ 0.45

_____

Use the Distributive Property to write an equivalent expression.

8. 3(15 + 11)

_____

9. $34a + 12ab$

_____

10. $8x(4 + 2b) + 10$

_____

11. $3q + 12w + 4w^2$

_____

Solve each equation.

12. $\frac{1}{2}h = 24$ $h =$ _____

13. $16 = 2w$ $w =$ _____

14. $x \div 12 = 9.2$ $x =$ _____

15. $8 = \frac{3}{4}b$ $b =$ _____

16. Stretch Your Thinking Use multiplication to write an equation that you can use to find the width, w, of a rectangle with length 9 ft and area 127.8 ft^2. Then use the equation to find the width.

_____