Name _____

1. The table shows the number of cups of flour, *f,* that a bakery needs for the number of pound cakes that they make, *p.*

Pound Cakes, *p*	3	6	9	14
Cups of Flour, *f*	8.25	16.5	24.75	

Part A

Write an equation that relates the number of cups of flour to the number of pound cakes that the bakery makes.

Part B

Use the equation to complete the table. Show how you determined the number of cups of flour needed for 14 cakes.

**2.** Write the inequality that the graph represents.

3. Draw lines to match each equation on the left with the value on the right that makes the equation true.

$12.4 - p = 7.9$	6
$156 \div r = 26$	9
$8w = 120$	15
$t + 17.8 = 26.3$	4.5
$7 = 63 \div d$	8.5

4. For questions 4a–4d, choose Yes or No to tell if the two given numbers are opposites.

4a. 6 and -6 ○ Yes ○ No

4b. 8 and $\frac{1}{8}$ ○ Yes ○ No

4c. $-(-12)$ and -12 ○ Yes ○ No

4d. 7 and $-\frac{1}{7}$ ○ Yes ○ No

5. Write the letter of each point on the number line that corresponds to its value. Then explain how you decided which value corresponds to point *B.*
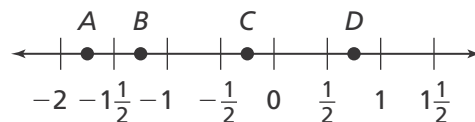
$-\frac{1}{4}$ ☐ $\frac{3}{4}$ ☐ $-1\frac{1}{4}$ ☐ $-1\frac{3}{4}$ ☐

6. Which expression is **NOT** equivalent to $24 + 6x$?

Ⓐ $2(3x + 12)$

Ⓑ $28 + 4x - 4 + 2x$

Ⓒ $5x + 7 + x + 17$

Ⓓ $3(8 + 3x)$

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7. To prepare for the winter season, the manager of an outdoor ice skating rink ordered 4,920 pounds of sand to keep the areas around the skating rink from being too slippery. One bag of sand is 40 pounds.

Choose Yes or No to tell which of the following equations can be used to find how many bags of sand, b, the manager ordered.

7a. $4,920 - b = 40$ ○ Yes   ○ No

7b. $4,920 \div 40 = b$ ○ Yes   ○ No

7c. $4,920 \div b = 40$ ○ Yes   ○ No

7d. $40b = 4,920$ ○ Yes   ○ No

7e. $40 + b = 4,920$ ○ Yes   ○ No

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8. Tamera graphs the following points on a coordinate plane.

$P(3, -4)$ $Q(-7, 2)$ $R(5, 3)$ $S(6, -1)$

Which statement is correct?

Ⓐ A reflection of P across the x-axis is at $(3, 4)$.

Ⓑ A reflection of Q across the y-axis is at $(7, -2)$.

Ⓒ A reflection of R across the x-axis is at $(-5, 3)$.

Ⓓ A reflection of S across the y-axis is at $(6, 1)$.

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9. Use the expression shown below.

$\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$

Part A

Fill in the blank to write an equivalent expression using an exponent.

$\left(\frac{1}{4}\right)^{\square}$

Part B

What is the value of the expression?

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10. Which equation is equivalent to $3 = 87 \div h$?

Ⓐ $3 = (87 \div h) - 9$

Ⓑ $3 \times 9 = (87 \div h) \div 9$

Ⓒ $3 + 9 = (87 \div h) + 9$

Ⓓ $3 - 9 = (87 \div h)$

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11. What is the value of the expression $3 \times (6 + 1.4) - 4^2$? Describe the steps you followed to find the value.

12. Kyle has picked $5\frac{1}{3}$ bushels of apples. He wants to know how many more bushels, b, of apples he needs to pick to have 9 bushels in all.

Part A

Write an equation to describe this situation.

Part B

How many more bushels does Kyle need to pick? Show your work.

13. Use the expression shown below.
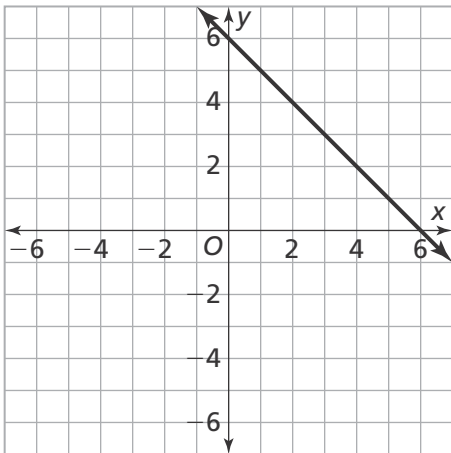
$5.2x + 8 + 2.1x - 3$

Part A

Write an equivalent expression by combining like terms.

Part B

Explain how you used properties of operations in Part A.

**14.** Rand says the greatest common factor (GCF) of 45 and 75 is 5. Do you agree? Explain.

15. Which of the following equations was used to graph the line shown?

Ⓐ $y = 6 + x$

Ⓑ $y = 6 - x$

Ⓒ $y = x - 6$

Ⓓ $y = 6x$

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16. The least number of customers in a shop at any time during the day was 15. Fran represented this situation with the inequality $c > 15$, where c is the number of customers in the shop. Is Fran correct? Explain.

17. The points $A(-5, 5)$ and $B(-5, -7)$ are plotted on the coordinate plane.
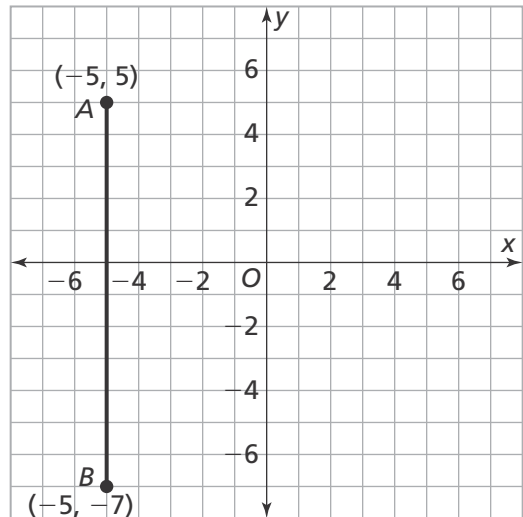
Part A

Make a rectangle that has points A and B as two of its vertices and has a perimeter of 40 units. Draw and label the two other vertices as points C and D on the coordinate plane. Draw line segments to show the rectangle.

Part B

Explain how you determined the locations of the other two vertices.

18. Solve each equation. Then write each equation in the appropriate box below.

$\frac{x}{3} = 0.6$ $x + 3.1 = 5.5$

$3x = 7.2$ $6 = 4.2 + x$

Equations with Solution $x = 1.8$	Equations with Solution $x = 2.4$

19. Evaluate the expression for each set of values given in the table.

	$a = 4$ $b = 3$	$a = 2$ $b = 21$	$a = 3$ $b = 6$
$a^2 + b \div 3$			

20. Choose numbers from the box to complete each equation. Numbers may be used more than once or not at all.

2	3	4
5	7	9

$\frac{1}{4} \div \frac{5}{8} = \frac{\square}{\square}$ $\frac{1}{3} \div \frac{7}{9} = \frac{\square}{\square}$ $\frac{3}{5} \div \frac{9}{10} = \frac{\square}{\square}$

21. Use the expression shown below.

$(4y + 8) \div 6 - 12$

Complete the table by writing the parts of the expression that correspond to the descriptions.

Description of Part	Part of Expression
Variable	
Sum	
Quotient	
Coefficient	

22. Without multiplying, write $>$, $<$, or $=$ in each circle to make the statements true.

22a. $2\frac{1}{3} \times \frac{3}{7} \bigcirc 2\frac{1}{3}$

22b. $7\frac{1}{9} \times \frac{4}{4} \bigcirc 7\frac{1}{9}$

22c. $1\frac{1}{12} \times 2\frac{4}{5} \bigcirc 2\frac{4}{5}$

22d. $\frac{5}{7} \times 1\frac{8}{9} \bigcirc 1\frac{8}{9}$

23. Draw lines to match each equation on the left with its solution on the right.

| $3k = 48$	24
$7p = 147$	16
$9m = 216$	21
$8c = 184$	18
$4g = 72$	23

24. Find the quotient.

$1{,}107 \div 27$

25. Jack writes $-2°C > -5°C$ to compare the temperature on two winter days. Do you agree with his comparison? Explain.

26. Write an expression that represents 5 more than two times the value of *n*.

27. Lily used a coordinate plane to graph the path she walked from her house to the library. She started at her house at $A(-6, -3)$, walked to a store at $B(5, -3)$, and then walked to the library at $C(5, 7)$.

Part A

Graph and label the points *A, B,* and *C* on the coordinate plane. Then draw line segments to show Lily's path.

1 unit = 1 block
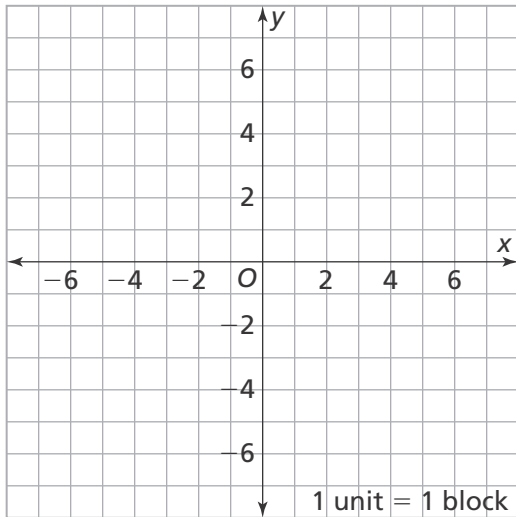
Part B

Lily claimed that she walked more than 20 blocks. Do you agree? Calculate the distance that Lily walked from her house to the library to justify your answer.

28. Which graph represents the solutions of the inequality $k > 11$?

Ⓐ
8 9 10 11 12 13 14

Ⓑ
8 9 10 11 12 13 14

Ⓒ
8 9 10 11 12 13 14

Ⓓ
8 9 10 11 12 13 14
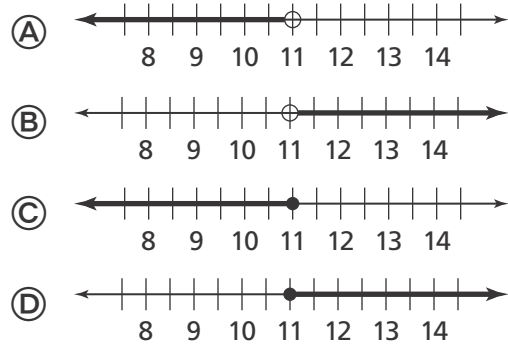
29. In questions 29a–29e, choose Yes or No to tell if 24 is the LCM of the pair of numbers.

29a. 8 and 12   ○ Yes ○ No

29b. 2 and 6   ○ Yes ○ No

29c. 3 and 8   ○ Yes ○ No

29d. 6 and 8   ○ Yes ○ No

29e. 3 and 4   ○ Yes ○ No

30. Richard sells frozen juice cups at a fair for $1.25 each. The amount of money, *m,* he makes each day and the number of cups, *c,* that he sells are related. Which variable is the independent variable and which is the dependent variable? Explain.