Name _____

Complete each exercise.

Add, subtract, multiply, or divide.

1. $62 + 6.2$

2. $74.42 - 11.2$

3. $1.4 \cdot 2$

_____

4. $\dfrac{2}{5} + \dfrac{1}{5}$

5. $\dfrac{3}{7} + \dfrac{1}{14}$

6. $\dfrac{2}{5} - \dfrac{1}{7}$

_____

7. $\dfrac{2}{3} \cdot \dfrac{2}{5}$

8. $43 \div 5$

9. $\dfrac{2}{9} \div \dfrac{4}{5}$

_____

10. $\dfrac{4}{5} \cdot 2$

11. $1.2 \cdot 0.21$

12. $17 \cdot 10$

_____

13. $17 \cdot 100$

14. $17 \div 10$

15. $217 \div 100$

_____

16. $5 - 7$

17. $2\dfrac{2}{3} + \dfrac{2}{3}$

18. $2\dfrac{1}{3} \cdot \dfrac{3}{4}$

_____

Write in order from least to greatest.

19. $301, 99, 103$

20. $2, -1, -2$

21. $3, 1.3, 1.03$

22. $\dfrac{2}{5}, \dfrac{2}{9}, \dfrac{1}{15}$

_____

Write the numbers that express the same quantity.

23. $0.3, 0.30, 0.03, 3.0$

24. $\dfrac{2}{5}, 2.5, 0.4, 0.2$

25. $\dfrac{3}{4}, \dfrac{4}{3}, \dfrac{9}{12}, 0.4$

_____

Round to the nearest whole number.

26. 2.91

27. 0.52

28. 0.098

29. $\dfrac{3}{7}$

30. $\dfrac{14}{3}$

_____

Find the value of each expression.

31. $3 + x$, if $x = 4$

32. $8a$, if $a = 0$

33. $2ab$, if $a = 1.5$ and $b = 1.5$

_____

Name _____

Complete each exercise.

Compute.

1. $|5|$

2. $|0|$

3. $-|-3|$

4. $|7 - 12|$

5. $|8 - 11| - 7$

6. $\frac{1}{7} \cdot \frac{7}{8}$

7. $\frac{3}{5} + \frac{1}{10}$

8. $\left(\frac{4}{5} + \frac{1}{10}\right)30$
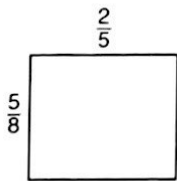
9. $[7 - (-12)] - (18 + 3)$
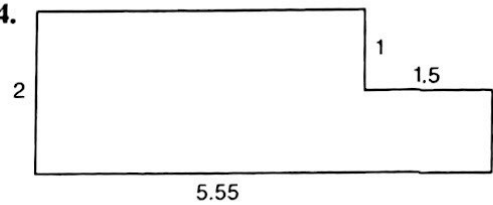
10. $12 \cdot 3 + 3 \cdot 8$

11. $12 + 6 \div 3$

12. $23.02 - (8 - 7) - (7 - 6) - (6 - 5.2)$

Calculate the area of each region.

13.

14.

Simplify each expression using the order of operations.

15. $\frac{1}{8}(24 + 8a)$

16. $7 - (k + 5)$

17. $20 - 2(k - 20)$

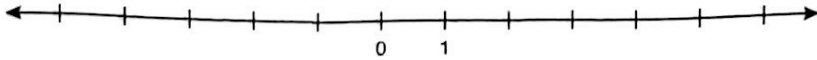18. $\frac{1}{2}(6x - 4) + \frac{2}{3}(6x + 3)$

Name _____

Complete each exercise.

Graph each point on the number line.

1. A(2)

2. B(−4)

3. C(−0.5)

Perform each operation.

4. $(-12) + 21$

5. $7 - (-5)$

6. $(-2) - (-5)$

_____

7. $(-12)2.5$

8. $7(-0.5)$

9. $(-2)(-0.5)$

_____

10. $12 \div (-6)$

11. $(-4) \div 8$

12. $(-12) \div (-18)$

_____

13. $|7|$

14. $|-11|$

15. $|0|$

_____

Solve each equation.

16. $4.5a = 2.25$

17. $12 = -\frac{3}{2}c$

18. $b - 0.4 = -18$

_____

19. $12.1 = y + 1.4$

20. $2x + 4 = 102$

21. $39 - x = 2.7$

_____

22. $|x| = 9$

23. $|x + 5| = 13$

24. $|2x - 3| = 15$

_____

Name _____

Complete each exercise.

Graph each point.

  1. $A\,(-9, -2)$

  2. $B\,(-8, 10)$

  3. $C\,(-2, -9)$

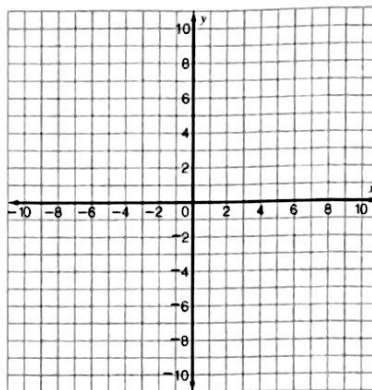 **4.** $D\,(7, -3)$

  5. $E\,(-3, 9)$

  6. $F\,(-3, -9)$

  7. $G\,(8, 10)$

  8. $H\,(-2, 10)$

  9. Record all pairs of points that are located on the same vertical line.

_____

Calculate the value of each expression.

10. $-87 - (-3)$ **11.** $2\frac{1}{3} \div \frac{7}{9}$ **12.** $15.7 + 1.34$

13. $\frac{12}{17} \cdot 8\frac{1}{2}$ **14.** 2^3 **15.** 3^{-2}

Calculate the value of each expression given the value of the variable.

16. $1.2\,(n - 1)$, if $n = 11$

_____

17. $\frac{3}{7} \cdot 7^{n-1}$, if $n = 3$

_____

18. $(23 + 17) \div (n - 1)$, if $n = 5$

_____

19. $4.2 \cdot 3^{k+1}$, if $k = 0$
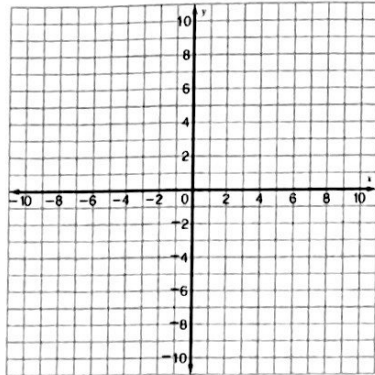
_____

20. $3^2 \cdot 3^{k+1}$, if $k = -4$

_____

Name _____

Complete each exercise.

Graph each point.

1. $A\,(6, 8)$
2. $B\,(0, 9)$
3. $C\,(-3, 2)$
4. $D\,(-1, 0)$
5. $E\,(10, -2)$
6. $F\,(0, 0)$
7. $G\,(-6, -6)$

Are points A, F, and G located on the same straight line?

8. _____

For each statement, write the value of the variable that would make the statement true.

9. $\dfrac{7}{5} = \dfrac{-14}{x}$

_____

10. $4 = \dfrac{y}{-3}$

_____

11. $\dfrac{a}{12} = \dfrac{0}{14}$

_____

Solve each equation.

12. $4x + 1 = -3x + 5$

_____

13. $\dfrac{1}{6}y = -\dfrac{1}{3}(y + 1)$

_____

Solve each inequality.

14. $-a \le 3$

_____

15. $b > 12 - b$

_____

Simplify each expression.
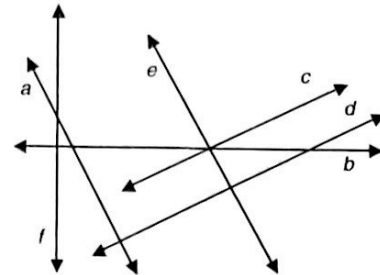
16. $(2 - x)2 + 3x$

_____

17. $\dfrac{2}{3}\,[3x - (-6)]$

_____

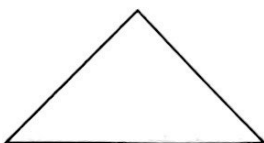**List all the lines that appear to be parallel to line a.**

18. _____

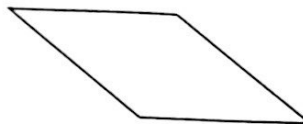**List all the lines that appear to be perpendicular to line a.**

19. _____

For each figure, draw all the lines of symmetry.

20.

21.

Name _____

Complete each exercise.

Simplify each expression.

1. $2x + 2 - 3 + x$

2. $3x + 2a - 1.5 - 1.5x - 0.5a$

_____

3. $-1 - 4(x + 1) - 7x + y - 4$

4. $2 + x - (x - 1) + y$

_____

5. $x^2 \cdot x$

6. $x^5 \cdot x^2$

_____

7. $-x^3 \cdot x^3$

8. $5x^2 \cdot 3x^4$

_____

9. $(x + 4)x^4$

10. $\frac{1}{2}x(x^2 - 3)$

_____

11. $x^3 \div x$

12. $x^6 \div x^2$

_____

13. $8x^8 \div (2x^2)$

14. $-12x^7 \div 3x^6$

_____

Find the area of a rectangle with sides a and b, if

15. $a = 8$ cm and $b = 3$ cm

16. $a = 3x$ ft and $b = 6$ ft

_____

17. $a = 2 + x$ mi and $b = x$ mi

18. $a = 6$ m and $b = 4x$ m

_____

19. $a = x + 1$ km and $b = 5$ km

20. $a = x + 7$ in. and $b = 2x$ in.

_____

Divide each of the following using long division. Show your work.

21. $478,128 \div 12$

22. $19,308 \div 12$

23. $2835 \div 16$

Name _____

Complete each exercise.

Fill in the blanks to make each sentence true.

1. $6 = $ ___ $\bullet\ 3$

2. $8 = 8 \bullet$ ___

3. $12 = $ ___ $\bullet\ (-4)$

4. $-30 = $ ___ $\bullet\ 3$

5. $30 = (-6) \bullet$ ___

6. $54 = $ ___ $\bullet\ (-9)$

Record the greatest common factor of each pair of numbers.

7. 20 and 10

8. 20 and 30

9. 40 and 41

10. 1 and 10

11. 56 and 84

12. 36 and 48

Find each product.
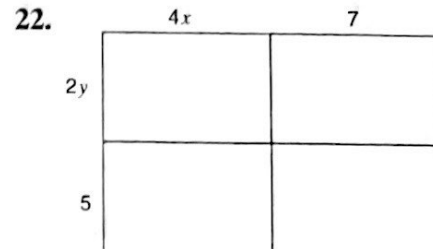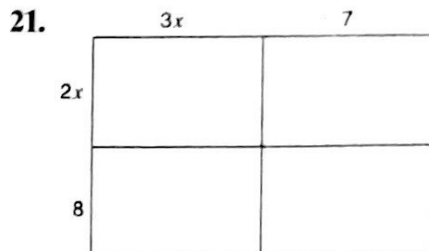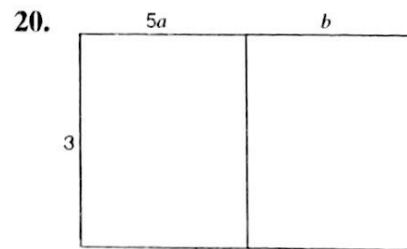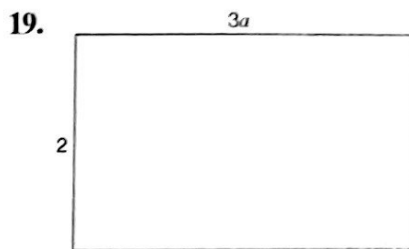
13. $4a(5b)$

14. $3a^2(2ab)$

15. $3a^2(2a + b)$

16. $(4a + 3)(2a + 1)$

17. $(4a - 3)(2a + 1)$

18. $(4a - 3)(2a - 1)$

Write the polynomial represented by each area model.

19.

	$3a$
2	

20.

	$5a$	b
3		

21.

	$3x$	7
$2x$		
8		

22.

	$4x$	7
$2y$		
5		

Name _____

Complete each exercise.

Factor completely.

1. 6

2. 8

3. 18

4. 19

5. 54

6. 49

7. 1

8. 81

9. 10

Evaluate each expression.

10. $\sqrt{81}$

11. $\sqrt{0}$

12. $(-5)^2$

13. $\sqrt{3^2 + 4^2}$

Solve each equation.

14. $y^2 = 16$

15. $(x - 2)^2 = 25$

16. $(a + 4)^2 = 0$

17. $b^2 = 17$

18. $(c - 1)^2 = -4$

19. $x^2 = 5$

20. $|a| = 5$

21. $|c| = 0$

22. $|k| = -2$

Simplify each expression.

23. $x^2 + 2 + 8x + 3x^2 - 7x - 2$

24. $4a^2 + 2b - (3a + 2b)$

25. $5xa^2(3x^2a^3)$

26. $a^2 \cdot a^7$

27. $(3x^3)^2$

28. $(5ab)^2 \cdot 3a^3$

Name _____

Complete each exercise.

For each figure, write "Y" if it has a line of symmetry and "N" if it does not have one. Then for each figure, show all the lines of symmetry in the picture.

1. ∇

2. $\vee$

3. $\frown$

4. $\wedge$

_____ _____ _____ _____

Evaluate.

5. $2(3)^2 + 4 \bullet 3 + 1$

_____

6. $3(-2)^2 + 4(-2) - 10$

_____

7. $3x^2 - 6x + 7$, when $x = \dfrac{1}{3}$

_____

8. $\dfrac{-x^2}{4} + 8x - 12$, when $x = 2$

_____

9. $3x^2 - 6x + 7$, when $x = -\dfrac{1}{3}$

_____

10. $\dfrac{-x^2}{4} + 8x - 12$, when $x = -2$

_____

Factor.

11. $x^3 + x^2$

_____

12. $6x^2 - 18x$

_____

13. $x^2 + 2x + 1$

_____

14. $x^2 - 5x + 6$

_____

15. $x^2 - 9$

_____

16. $x^2 + x - 2$

_____

Find the value of x.

17. $x^2 = 4$

_____

18. $x^2 + 1 = 10$

_____

19. $(x - 1)^2 = 9$

_____

Use substitution to solve each system of equations.

20. $\begin{cases} x + y = 4 \\ x = y \end{cases}$

_____

21. $\begin{cases} 2x + 1 = y \\ y - x = 6 \end{cases}$

_____

Name _____

Complete each exercise.

Find the greatest common factor for each pair of numbers.

1. 6 and 8

2. 18 and 19

3. 120 and 180

4. 80 and 160

_____

Write each fraction in lowest terms.

5. $\dfrac{6}{21}$

6. $\dfrac{28}{63}$

7. $\dfrac{32}{48}$

8. $\dfrac{33}{55}$

Evaluate each expression.

9. $|83 - 100| \div 100$

10. $|52 - 50| \div 50 \bullet 100$

Solve each equation.

11. $\dfrac{x}{2.5} = \dfrac{7}{8}$

12. $\dfrac{3}{5} = \dfrac{8}{a}$

13. $\dfrac{52}{y} = \dfrac{13}{14}$

Write the percent as a decimal.

14. 50%

15. 13%

16. 120%

Write the decimal as a percent.

17. 0.25

18. 0.5

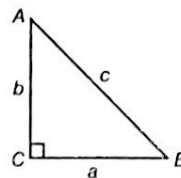**19.** 0.05

Use the figure at the right to answer questions 20–24.

20. Name the leg opposite $\angle A$.

21. Name the leg adjacent to $\angle B$.

22. If $a = 12$ and $b = 5$, find c.

23. If $a = 4$ and $c = 5$, find b.

24. If $\angle B = 37°$, find $\angle A$.

What percent of b is a?

25. If $a = 15$ and $b = 30$?

26. If $a = 5$ and $b = 200$?

Name _____

Complete each exercise.

Solve each equation.

1. $18 = \dfrac{162}{x}$

2. $12 = \dfrac{1.44}{y-1}$

3. $7 = \dfrac{84}{a-2}$

4. $0.8 = \dfrac{40}{x} + 0.4$

_____   _____   _____   _____

Determine the domain of each function.

5. $y = x + 5$

6. $y = \dfrac{x}{3}$

7. $y = \dfrac{3}{x}$

_____   _____   _____

8. $y = \dfrac{3}{x-2}$

9. $y = \sqrt{x}$

10. $y = \sqrt{x+8}$

_____   _____   _____

Graph each of the following on a coordinate plane.

11. $x = 2$

12. $y = 2$

13. $y = x + 2$

14. $y = x^2 + 2$

_____   _____   _____   _____

In questions 15–20, $xy = -36$. Find y for each of the given values of x.

15. $x = -18$

16. $x = -9$

17. $x = -1$

_____   _____   _____

18. $x = -0.1$

19. $x = 0.5$

20. $x = 18$

_____   _____   _____

Evaluate each expression.

21. $\sqrt{25}$

22. $\sqrt{0.01}$

23. 5^2

_____   _____   _____

24. 2^5

25. -2^4

26. $\sqrt{2^6}$

_____   _____   _____

27. $3 \cdot 2^4$

28. $(10^3)^2$

29. $(0.1)^4$

_____   _____   _____

Name _____

Complete each exercise.

Write each as a percent. Round to the nearest hundredth, if needed.

1. $\frac{1}{2}$

2. 0.32

3. $\frac{3}{28}$

4. 0.6

_____ _____ _____ _____

5. 0.03

6. $\frac{3}{80}$

7. $\frac{50}{80}$

8. $\frac{4}{11}$

_____ _____ _____ _____

Write each as a decimal.

9. $\frac{7}{10}$

10. 7%

11. $\frac{28}{35}$

12. 53%

_____ _____ _____ _____

Order the numbers from least to greatest.

13. 3.3, 2.4, 3.02, 4.1, 3.9, 2.8, 3.09

14. $\frac{1}{3}, \frac{2}{5}, \frac{2}{3}, \frac{1}{5}, \frac{1}{2}, \frac{3}{4}, \frac{3}{5}$

_____ _____

Evaluate each expression.

15. $(5 \bullet 4 \bullet 3 \bullet 2) \div (3 \bullet 2 \bullet 1)$

16. $(15 \bullet 14 \bullet 13 \bullet 12) \div (4 \bullet 3 \bullet 2 \bullet 1)$

_____ _____

17. $(25 \bullet 24 \bullet 23 \bullet 22) \div (4 \bullet 3 \bullet 2 \bullet 1)$

18. $(810 \bullet 800 \bullet 790) \div (30 \bullet 20 \bullet 10)$

_____ _____

Multiply, add, or divide.

19. $0.48 \div 0.8$

20. $0.5 \bullet 0.25$

_____ _____

21. $0.3 + 0.08$

22. $0.25 \div 0.75$

_____ _____

23. $0.35 \bullet 0.9$

24. $0.28 + 0.212$

_____ _____

25. $\frac{3}{8} \bullet \frac{7}{12}$

26. $\frac{4}{5} \bullet \frac{9}{10}$

_____ _____