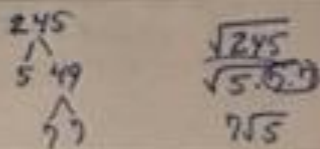


Which is equivalent to the sum of five and the product of 7 and the square of x.

- A. $(5 + 7x)^2$
 B. $5 + 7x^2$
 C. $5 - 7x^2$
 D. $5^2 + 7x$

2. The expression $7\sqrt{5}$ is the simplest radical form of

- A. $\sqrt{1,225} = 35$
 B. $\sqrt{175} = 5\sqrt{7}$
 C. $\sqrt{35}$ simplified
 D. $\sqrt{245}$



3. Evaluate the expression:

$$\frac{(\sqrt{-8})^2}{2} = \frac{(-2)^2}{2} = \frac{4}{2} = 2$$

- A. 2
 B. -2
 C. -8
 D. 8

4. Barry's salary is \$9.45 per hour. Which expression represents Barry's earnings for h hours?

- A. $9.45h$
 B. $h - 9.45$
 C. $9.45 + h$
 D. $h + 9.45$

Evaluate the expression:

A. 744
 B. 396
 C. 723
 D. 741

$$312 - 4(6 + 3(8 - 5(6 + 3))) \cdot 3^2$$

$$312 - 4(6 + 3(8 - 5(9))) \cdot 3^2$$

$$312 - 4(6 + 3(8 - 45)) \cdot 3^2$$

$$312 - 4(6 + 3(-37)) \cdot 3^2$$

$$312 - 4(6 - 111) \cdot 3^2$$

$$312 - 4(-105) \cdot 3^2$$

$$312 - -420 \cdot 3^2$$

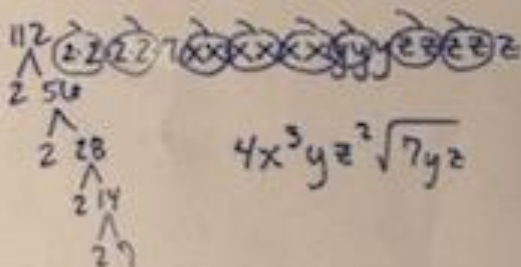
$$732 \cdot 3^2$$

$$732 \cdot 9$$

6. In simplest radical form, the expression shown is equal to

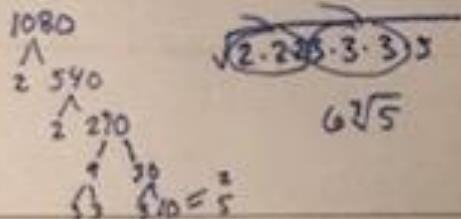
- A. $56x^4y^2z^3\sqrt{2x^2yz}$
 B. $x^3y^2z^4\sqrt{112yz}$
 C. $8x^3\sqrt{7y^3z^3}$
 D. $x^3yz^2\sqrt{7yz}$

$$\sqrt{112x^4y^3z^5}$$



7. What is $\sqrt[3]{1080}$ expressed in simplest radical form?

- A. $5\sqrt[3]{6}$
 B. $6\sqrt[3]{5}$
 C. $6\sqrt[3]{30}$
 D. $8\sqrt[3]{135}$



8. Solve the equation $4(2 - 2y) + 6 = 2(7 - 4y)$, if possible.

$$\begin{array}{l} 8 - 8y + 6 = 14 - 8y \\ 14 - 8y = 14 - 8y \end{array}$$

- A. $y = 4$
 B. $y = 8$
 C. all real numbers
 D. no solution

Solve for y:

$$5x = \frac{w + y + z}{5} - 5$$

- A) $y = x \cdot w \cdot z \cdot 5$
C) $y = 5x \cdot w \cdot z$

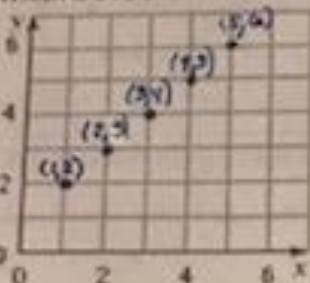
$$\begin{aligned} 5x &= w + y + z \\ -w & \quad -w \\ 5x - w &= y + z \\ -z & \quad -z \\ 5x - w - z &= y \end{aligned}$$

- B) $y = 5x \cdot w \cdot z$
D) $y = 5x - 5w - 5z$

10. Which equation illustrates the commutative property of multiplication?

- A. $5(x + 2) = 5x + 10$ B. $5(2x) = 10x$
C. $5(2x) = (2x)5$ D. $5(2x) \cdot \frac{1}{5(2x)} = 1$

11. Which is a rule for the function shown?



x	y
1	2
2	3
3	4
4	5
5	6

- A. $y = 2x$ B. $y = x - 1$
C. $y = 2x - 2$ D. $y = x + 1$

Which statement below correctly justifies whether the table below represents a function?

Input	5	-3	6	-3	6
Output	-1	6	-5	5	-8

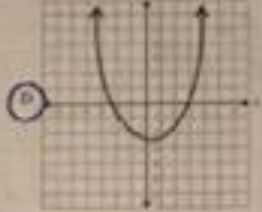
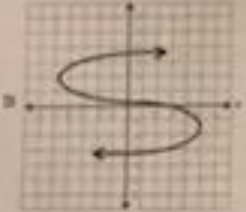
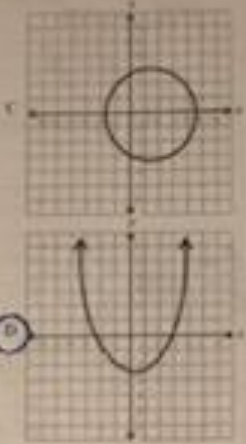
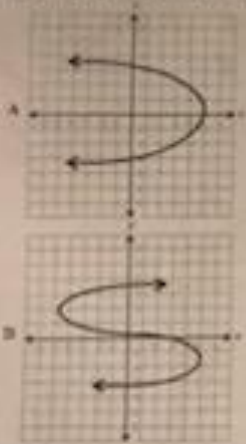
- A. Yes, because each output occurs exactly once.
B. No, because each output occurs exactly once.
C. Yes, because exactly one input is repeated.
D. No, because one input is paired with two outputs.

13. Which set of numbers represents the domain of the function in the table?

Input	Output
-2	6
0	0
2	-6
4	-12

- A. -12, -6, 0, 6
B. -12, -6, -2, 0, 2, 4, 6
C. -2, 2, 4
D. -2, 0, 2, 4

14. Which graph represents a function of x ?

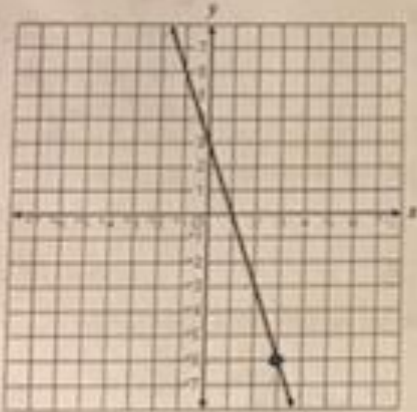


15. What is the range of the function $y = -x + 2$ with domain $\{3, 6, 8, 9\}$?

- A. $\{-3, -6, -8, -9\}$
- B. $\{-1, -4, -6, -7\}$
- C. $\{3, 6, 8, 9\}$
- D. $\{5, 8, 10, 11\}$

$$\begin{aligned}
 y &= -3 + 2 = -1 \\
 y &= -6 + 2 = -4 \\
 y &= -8 + 2 = -6 \\
 y &= -9 + 2 = -7
 \end{aligned}$$

16. The graph of the function $f(x) = -3x + 3$ is shown.



What is the value of $f(3)$?

- F. 3
- G. 0
- H. -2
- J. -6

$$\begin{aligned}
 f(3) &= -3(3) + 3 \\
 &= -9 + 3 \\
 &= -6
 \end{aligned}$$

17. If $f(x) = 4(x - 3) + 3(x - 1)$, what is $f(3)$?

- A. 6
- B. 8
- C. 12
- D. 15

$$\begin{aligned}
 f(3) &= 4(3-3) + 3(3-1) \\
 &= 4(0) + 3(2) \\
 &= 6
 \end{aligned}$$

18. What is the slope of a line that passes through $(0, 6)$ and $(-3, -4)$?

- A. 0
- B. $\frac{3}{10}$
- C. $\frac{10}{3}$
- D. undefined

$$\frac{-4 - 6}{-3 - 0} = \frac{-10}{-3}$$

19. What is the slope of a line that passes through $(-12, 4)$ and $(-8, 4)$?

- A. 0
- B. $\frac{4}{9}$
- C. $\frac{9}{4}$
- D. undefined

$$\frac{4 - 4}{-8 - (-12)} = \frac{0}{4}$$

Which ordered pair is a solution of $2x = 4 - 3y$?

$Z(1) = 4 - 3(1)$
 $2 = 4 - 3$
 $2 = 1$ (False)

$Z(2) = 4 - 3(-2)$
 $2 = 4 + 6$
 $2 = 10$ (False)

$Z(0) = 4 - 3(2)$
 $0 = 4 - 6$
 $0 = -2$ (False)

$Z(-1) = 4 - 3(-1)$
 $-2 = 4 + 3$
 $-2 = 7$ (False)

$Z(-1) = 4 - 3(2)$
 $-2 = 4 - 6$
 $-2 = -2$ (True)

A. (4, 4)
 B. (2, -2)
 C. (0, 2)
 D. (-1, 2)

21. Which of the following is an equation in slope-intercept form of the line shown?



$$m = \frac{-9 - 9}{3 - (-3)} = \frac{-18}{6} = -3$$

- A. $y = x - \frac{4}{3}$
 B. $y = x - \frac{2}{3}$
 C. $y = -\frac{4}{3}x + 1$
 D. $y = -\frac{2}{3}x + 1$

22. Which of the following is an equation of the line with a slope of -2 and a y-intercept of -3?

$2x - y = 6$
 $-y = -2x + 6$
 $y = 2x - 6$

C. $4x + 2y = -5$
 $2y = -4x - 5$
 $y = -2x - \frac{5}{2}$

$2x = 4x - 6$
 $-2x = -6$
 $x = 3$

B. $2y = -10x - 8$
 $y = -5x - \frac{4}{1}$

23. Which of the following is an equation of the line that passes through (-1, 2) and is perpendicular to the line $x - 2y = 5$?

A. $y = -\frac{1}{2}x + \frac{1}{2}$

C. $y = -2x$

B. $y = \frac{1}{2}x + \frac{5}{2}$

D. $y = 2x + 4$

$x - 2y = 5$
 $-2y = -x + 5$
 $y = \frac{1}{2}x - \frac{5}{2}$

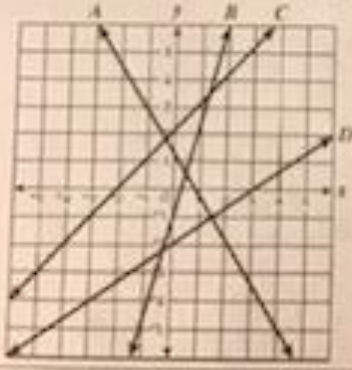
$y = \frac{1}{2}x - \frac{5}{2}$ perpendicular is negative reciprocal

24. What is the slope of a line that would be parallel to the following equation?

A. 7
 B. -7
 C. -4
 D. 4

$7x + y = 4$
 $y = -7x + 4$

25. Which line on the graph has a slope of 1?



- A
 B
 C
 D

Debbie recorded the time it took seven children of different ages to run one lap around the track.

Age of Child (years)	Time (seconds)
4	225
8	185
10	178
11	170
14	112
14	108
18	52

Using a linear equation of best fit, which is closest to the length of time it should take Debbie's 8-year-old niece to run one lap?

- A 200 sec
 B 185 sec
 C 170 sec
 D 140 sec

$$y = -12.1253x + 272.271$$

$$y = -12.1253(8) + 272.271$$

$$y = 199.5192 \approx 200$$

27. This equation represents which type of relationship?

$$y = 3x$$

- A Inverse variation
 B Direct variation
 C Not enough information
 D Neither

28. Which is an inverse variation?

- A $y = -5x$
 B $y = \frac{5}{x}$
 C $y = \frac{1}{5}x$
 D $y = -5x + 1$

29. Which ordered pair is a solution of the linear system $14x + 7y = 7$ and $24x + 15y = 3$?

- A (2, -3) B (3, -2) C (2, 3) D (3, 2)

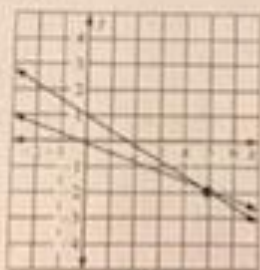
30. Mrs. Crews bought 4 pencils and 3 pens for \$5.60. Miss Houston bought 2 pencils and 3 pens of the same kind for \$4.60. What was the price of each pencil and each pen?

$$4x + 3y = 5.60$$

$$2x + 3y = 4.60$$

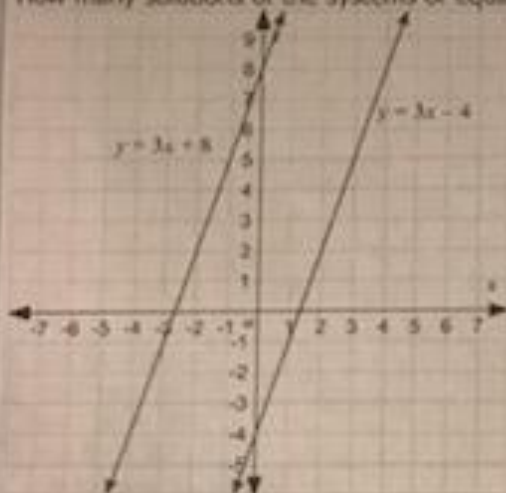
- A \$1.70 per pencil, \$0.20 per pen
 B \$0.50 per pencil, \$1.20 per pen
 C \$0.17 per pencil, \$1.64 per pen
 D \$0.80 per pencil, \$0.80 per pen

31. The graph represents a system of linear equations. What is the solution of the linear system?



- A (0, 0) B (0, 1) C (1, -2) D $(\frac{1}{2}, \frac{1}{2})$

32. How many solutions of the systems of equation shown below?



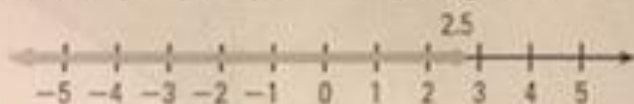
- A. infinite
- B. one
- C. two
- D. none

33. Which is the solution of $-3x + 4 > 7$?

- F
- G
- H
- J

$$\begin{aligned} -3x + 4 &> 7 \\ -4 & -4 \\ \hline -3x &> 3 \\ \frac{-3x}{-3} &> \frac{3}{-3} \\ x &< -1 \end{aligned}$$

34. Which inequality is represented by the graph?



- A. $x \leq 2.5$
- B. $x \leq -2.5$
- C. $x \geq 2.5$
- D. $x \geq -2.5$

35. If $\frac{1}{4}x + 1 > \frac{15}{2}$, then

- F. $x > \frac{13}{2}$
- G. $x > 29$
- H. $x > 28$
- J. $x > 26$

$$\begin{aligned} \frac{1}{4}x + 1 &> \frac{15}{2} \\ -1 & -1 \\ \frac{1}{4}x &> \frac{13}{2} \\ 4 \cdot \frac{1}{4}x &> \frac{13}{2} \cdot 4 \\ x &> \frac{52}{2} \\ x &> 26 \end{aligned}$$

36.

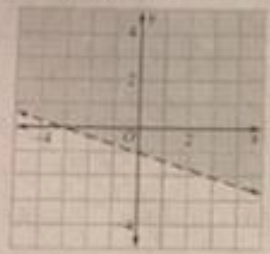
Which inequality describes the graph?



- A. $y > 5x + 10$
- B. $y > -5x + 10$
- C. $y < -5x + 10$
- D. $y < 5x + 10$

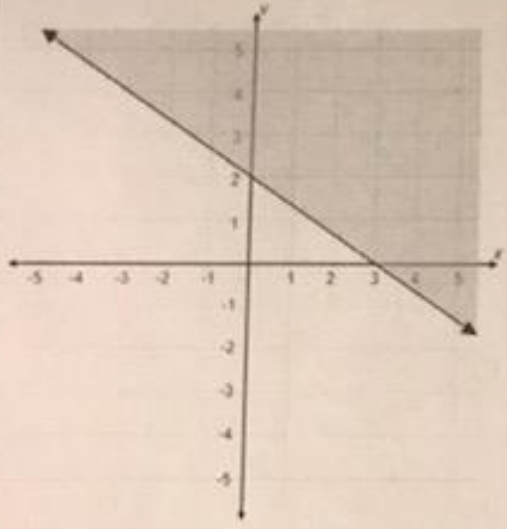
37.

Which point is a solution to the inequality shown on the graph below?



- A. $(-1, -2)$
- B. $(1, -2)$
- C. $(2, 1)$
- D. $(-2, -1)$

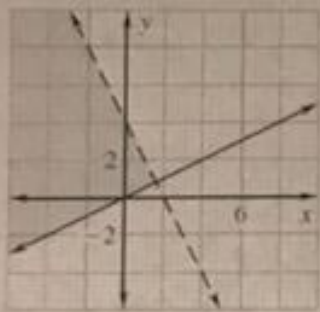
38. What is a possible slope, intercept, and inequality sign for the following graph?



- A. $2/3; 2; \geq$
- B. $-2/3; 2; \geq$
- C. $-3/2; -2; \leq$
- D. $3/2; 2; >$

39.

The graph of which system of inequalities is shown?



- (A) $y \leq \frac{1}{2}x$
 $4x + 2y < 8$
- (B) $y \leq \frac{1}{2}x$
 $4x + 2y > 8$
- (C) $y \geq \frac{1}{2}x$
 $4x + 2y < 8$
- (D) $y \geq \frac{1}{2}x$
 $4x + 2y > 8$

40. Which ordered pair is a solution of the system of linear inequalities $x - y > 6$ and $3x + y < 10$?

- ~~A.~~ (0, 0)
- (B.) (3, -4)
- ~~C.~~ (4, -2)
- ~~D.~~ (6, -1)