

## Unit 10: Writing Equations

Name: \_\_\_\_\_

Date: \_\_\_\_\_

- Which is an equation of the line that passes through the point  $(5, -2)$  and has a slope of  $-3$ ?  
A.  $y = -3x - 13$       B.  $y = 3x - 13$   
C.  $y = -3x + 13$       D.  $y = 3x + 13$
- Which is an equation of the line that passes through the points  $(1, 3)$  and  $(-1, 1)$ ?  
A.  $x = 1$       B.  $y = 2x + 1$   
C.  $y = x + 2$       D.  $y = 3$
- Which equation represents the line that passes through the points  $(-3, 7)$  and  $(3, 3)$ ?  
A.  $y = \frac{2}{3}x + 1$       B.  $y = \frac{2}{3}x + 9$   
C.  $y = -\frac{2}{3}x + 5$       D.  $y = -\frac{2}{3}x + 9$
- Which is an equation of the line that passes through the point  $(1, 4)$  and has a slope of  $3$ ?  
A.  $y = 3x + 4$       B.  $y = \frac{1}{3}x + 4$   
C.  $y = 3x - 1$       D.  $y = 3x + 1$
- What is the equation of the line that is perpendicular to the line  $y - 2x = 4$  and passes through point  $(2, 4)$ ?  
A.  $y = \frac{1}{2}x + 4$       B.  $y = -\frac{1}{2}x + 5$   
C.  $y = \frac{1}{2}x + 5$       D.  $y = -2x + 5$
- Which equation represents the line that has a slope of  $\frac{1}{2}$  and contains the point  $(0, 3)$ ?  
A.  $y = \frac{1}{3}x + \frac{1}{2}$       B.  $y = 3x + \frac{1}{2}$   
C.  $y = \frac{3}{2}x$       D.  $y = \frac{1}{2}x + 3$
- What is an equation of the line that passes through the points  $(3, -3)$  and  $(-3, -3)$ ?  
A.  $y = 3$       B.  $x = -3$   
C.  $y = -3$       D.  $x = y$
- An equation whose graph has a slope of  $-2$  and a  $y$ -intercept of  $3$  is  
A.  $x = -2y + 3$       B.  $y = -2x + 3$   
C.  $x = 3y - 2$       D.  $y = 3x - 2$

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9. What is an equation of the line parallel to the line whose equation is  $2x + y = 6$  and that passes through the point  $(0, -1)$ ?
- A.  $x + 2y = -1$       B.  $y = -1$   
C.  $2x + y = 1$       D.  $y = -2x - 1$
10. What is an equation of the line that passes through the points  $(1, 3)$  and  $(8, 5)$ ?
- A.  $y + 1 = \frac{2}{7}(x + 3)$       B.  $y - 5 = \frac{2}{7}(x - 8)$   
C.  $y - 1 = \frac{2}{7}(x + 3)$       D.  $y + 5 = \frac{2}{7}(x - 8)$
11. Which equation represents the line whose slope is  $\frac{1}{2}$  and whose  $y$ -intercept is 5?
- A.  $y = \frac{1}{2}x + 5$       B.  $y = 5x + \frac{1}{2}$   
C.  $y = \frac{1}{2}x - 5$       D.  $y = 5x - \frac{1}{2}$
12. The line  $3x - 2y = 12$  has
- A. a slope of  $\frac{3}{2}$  and a  $y$ -intercept of  $-6$   
B. a slope of  $-\frac{3}{2}$  and a  $y$ -intercept of  $6$   
C. a slope of  $3$  and a  $y$ -intercept of  $-2$   
D. a slope of  $-3$  and a  $y$ -intercept of  $-6$
13. Which phrase describes the graph of  $y = -1$  on the coordinate plane?
- A. a line parallel to the  $y$ -axis and 1 unit to the right of it  
B. a line parallel to the  $y$ -axis and 1 unit to the left of it  
C. a line parallel to the  $x$ -axis and 1 unit below it  
D. a line parallel to the  $x$ -axis and 1 unit above it
14. Which equation is equivalent to  $x + 2y = 6$ ?
- A.  $y = -x + 6$       B.  $y = -\frac{1}{2}x - 6$   
C.  $y = -x + 3$       D.  $y = -\frac{1}{2}x + 3$
15. A line is represented by the equation  $y = 3x - 7$ . Which statement about the line is true?
- A. The slope of the line is  $\frac{1}{3}$ .  
B. The  $y$ -intercept is  $-7$ .  
C. Point  $(1, 4)$  lies on the line.  
D. This line is parallel to the line whose equation is  $y = 2x - 7$ .
16. What is the slope of a line perpendicular to the graph of the equation  $5x - 3y = 2$ ?
- A.  $-\frac{3}{5}$       B.  $-\frac{1}{5}$       C.  $\frac{5}{3}$       D.  $5$

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17. What is the slope of a line that is perpendicular to the line whose equation is  $y = 4x + 1$ ?
- A.  $-\frac{1}{4}$     B.  $\frac{1}{4}$     C.  $-4$     D.  $4$
18. The slope of a line perpendicular to the line whose equation is  $y = 3x - 4$  is
- A.  $\frac{1}{3}$     B.  $-3$     C.  $-1$     D.  $-\frac{1}{3}$
19. What is the slope of a line perpendicular to the line whose equation is  $y = 2x + 7$ ?
- A.  $-2$     B.  $2$     C.  $-\frac{1}{2}$     D.  $\frac{1}{2}$
20. What is the slope of a line that is perpendicular to the line whose equation is  $y = 3x + 5$ ?
- A.  $-\frac{1}{3}$     B.  $-3$     C.  $3$     D.  $\frac{1}{5}$
21. If line  $\ell$  is perpendicular to line  $m$  and the slope of line  $\ell$  is undefined, what is the slope of line  $m$ ?
- A.  $1$     B.  $\frac{1}{2}$     C.  $0$     D.  $-1$
22. Lines  $\ell$  and  $m$  are perpendicular. The slope of  $\ell$  is  $\frac{3}{5}$ . What is the slope of  $m$ ?
- A.  $-\frac{3}{5}$     B.  $-\frac{5}{3}$     C.  $\frac{3}{5}$     D.  $\frac{5}{3}$
23. What is the slope of a line parallel to the line whose equation is  $y = 5x + 4$ ?
- A.  $-\frac{4}{5}$     B.  $-\frac{5}{4}$     C.  $5$     D.  $4$
24. What is the slope of a line that is perpendicular to the line whose equation is  $y - 2x = 5$ ?
- A.  $\frac{1}{2}$     B.  $2$     C.  $-\frac{1}{2}$     D.  $-2$
25. Which statement describes the lines whose equations are  $y = \frac{1}{3}x + 12$  and  $6y = 2x + 6$ ?
- A. They are segments.  
B. They are perpendicular to each other.  
C. They intersect each other.  
D. They are parallel to each other.
26. The graphs of the equations  $y = 2x - 7$  and  $y - kx = 7$  are parallel when  $k$  equals
- A.  $-2$     B.  $2$     C.  $-7$     D.  $7$
27. What is the slope of a line perpendicular to the line whose equation is  $y = -\frac{2}{3}x - 5$ ?
- A.  $-\frac{3}{2}$     B.  $-\frac{2}{3}$     C.  $\frac{2}{3}$     D.  $\frac{3}{2}$

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28. Which equation represents the line parallel to the  $y$ -axis and 4 units to the left of the  $y$ -axis?
- A.  $x = 4$                       B.  $x = -4$   
C.  $y = -4$                       D.  $y = 4$
29. Which pair of points will determine a line parallel to the  $x$ -axis?
- A.  $(1, 3)$  and  $(-2, 3)$       B.  $(1, -1)$  and  $(-1, 1)$   
C.  $(1, 3)$  and  $(1, -1)$       D.  $(1, 1)$  and  $(-3, -3)$
30. Which pair of points will determine a line parallel to the  $y$ -axis?
- A.  $(2, 3)$  and  $(-1, 3)$       B.  $(2, 2)$  and  $(-3, -3)$   
C.  $(3, 2)$  and  $(3, -1)$       D.  $(2, -2)$  and  $(-2, 2)$
31. What is the equation of a line that is parallel to the  $x$ -axis and passes through point  $(3, 5)$ ?
- A.  $x = 3$     B.  $y = 3$     C.  $x = 5$     D.  $y = 5$
32. The graph of which equation would *not* be parallel to the graph of the equation  $y = 3x + 3$ ?
- A.  $y = 3x$                       B.  $2y = 6x + 2$   
C.  $y - 3x = 4$                 D.  $y = 2x + 3$
33. Which equation represents a line that is parallel to the line whose equation is  $y = 3x - 1$ ?
- A.  $y = -\frac{1}{3}x + 1$               B.  $y = \frac{1}{3}x - 1$   
C.  $y = -3x - 1$               D.  $y = 3x + 1$
34. Which equation represents a line parallel to the line whose equation is  $y = \frac{2}{3}x + 3$ ?
- A.  $y = 2x - 3$                       B.  $y = \frac{1}{3}x + 3$   
C.  $y + 4 = \frac{2}{3}x$                       D.  $2y - 4 = 3x$
35. Which line is parallel to the line  $y = 2x - 4$ ?
- A.  $y = 2x + 6$                       B.  $y = -2x + 4$   
C.  $y = 4x - 2$                       D.  $2y = x + 4$
36. Write an equation of the line that passes through the point  $(6, -5)$  and is parallel to the line whose equation is  $2x - 3y = 11$ .
37. What is an equation of the line that passes through the point  $(7, 3)$  and is parallel to the line  $4x + 2y = 10$ ?
- A.  $y = \frac{1}{2}x - \frac{1}{2}$                       B.  $y = -\frac{1}{2}x + \frac{13}{2}$   
C.  $y = 2x - 11$                       D.  $y = -2x + 17$

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38. The lines represented by the equations  $y + \frac{1}{2}x = 4$  and  $3x + 6y = 12$  are
- A. the same line
  - B. parallel
  - C. perpendicular
  - D. neither parallel nor perpendicular
39. What is an equation of the line that passes through the point  $(-2, 3)$  and is parallel to the line whose equation is  $y = \frac{3}{2}x - 4$ ?
- A.  $y = -\frac{2}{3}x$
  - B.  $y = -\frac{2}{3}x + \frac{5}{3}$
  - C.  $y = \frac{3}{2}x$
  - D.  $y = \frac{3}{2}x + 6$
40. Which is an equation of a line perpendicular to the line whose equation is  $y = \frac{1}{3}x - 5$ ?
- A.  $y = \frac{1}{3}x + 5$
  - B.  $y = -\frac{1}{3}x - 5$
  - C.  $y = -3x - 5$
  - D.  $y = 3x + 5$
41. Which is an equation of a line perpendicular to the line whose equation is  $y = -\frac{1}{2}x + 5$ ?
- A.  $y = 2x - 1$
  - B.  $y = -2x - 1$
  - C.  $y = \frac{1}{2}x - 1$
  - D.  $y = -\frac{1}{2}x - 1$
42. What is an equation of the line that passes through the point  $(-2, 5)$  and is perpendicular to the line whose equation is  $y = \frac{1}{2}x + 5$ ?
- A.  $y = 2x + 1$
  - B.  $y = -2x + 1$
  - C.  $y = 2x + 9$
  - D.  $y = -2x - 9$
43. What is an equation of the line that contains the point  $(3, -1)$  and is perpendicular to the line whose equation is  $y = -3x + 2$ ?
- A.  $y = -3x + 8$
  - B.  $y = -3x$
  - C.  $y = \frac{1}{3}x$
  - D.  $y = \frac{1}{3}x - 2$
44. What is the slope of a line that is perpendicular to the line whose equation is  $3x + 4y = 12$ ?
- A.  $\frac{3}{4}$
  - B.  $-\frac{3}{4}$
  - C.  $\frac{4}{3}$
  - D.  $-\frac{4}{3}$
45. Which is an equation of the line that is parallel to  $y = 2x - 8$  and passes through the point  $(0, -3)$ ?
- A.  $y = 2x + 3$
  - B.  $y = 2x - 3$
  - C.  $y = -\frac{1}{2}x + 3$
  - D.  $y = -\frac{1}{2}x - 3$

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46. Which is an equation of the line that has a  $y$ -intercept of  $-2$  and is parallel to the line whose equation is  $4y = 3x + 7$ ?
- A.  $y = \frac{3}{4}x - 2$                       B.  $y = \frac{3}{4}x + 2$   
C.  $y = \frac{4}{3}x - 2$                       D.  $y = -\frac{4}{3}x - 2$
47. Which is an equation of the line that passes through the point  $(-2, 4)$  and is parallel to the line  $y = 3$ ?
- A.  $x = -2$                                 B.  $y = -2$   
C.  $x = 4$                                  D.  $y = 4$
48. Which is an equation of the line that passes through the point  $(0, 4)$  and is perpendicular to the line whose equation is  $y = -\frac{1}{2}x + 3$ ?
- A.  $y = -\frac{1}{2}x + 4$                       B.  $y = -2x + 4$   
C.  $y = 2x + 4$                          D.  $y = -2x - 4$
49. Write an equation of the line that passes through the origin and is parallel to the line whose equation is  $y = 3x - 7$ .
50. What is an equation of the line that passes through the point  $(4, -6)$  and has a slope of  $-3$ ?
- A.  $y = -3x + 6$                       B.  $y = -3x - 6$   
C.  $y = -3x + 10$                       D.  $y = -3x + 14$
51. Which point lies on the line whose equation is  $2x - 3y = 9$ ?
- A.  $(-1, -3)$                               B.  $(-1, 3)$   
C.  $(0, 3)$                                  D.  $(0, -3)$

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1.  
Answer:      C
2.  
Answer:      C
3.  
Answer:      C
4.  
Answer:      D
5.  
Answer:      B
6.  
Answer:      D
7.  
Answer:      C
8.  
Answer:      B
9.  
Answer:      D
10.  
Answer:      B
11.  
Answer:      A
12.  
Answer:      A
13.  
Answer:      C
14.  
Answer:      D
15.  
Answer:      B
16.  
Answer:      A
17.  
Answer:      A
18.  
Answer:      D
19.  
Answer:      C
20.  
Answer:      A

21.  
Answer:      C
22.  
Answer:      B
23.  
Answer:      C
24.  
Answer:      C
25.  
Answer:      D
26.  
Answer:      B
27.  
Answer:      D
28.  
Answer:      B
29.  
Answer:      A
30.  
Answer:      C
31.  
Answer:      D
32.  
Answer:      D
33.  
Answer:      D
34.  
Answer:      C
35.  
Answer:      A
36.  
Answer:       $y + 5 = \frac{2}{3}(x - 6)$
37.  
Answer:      D
38.  
Answer:      B
39.  
Answer:      D

40.  
Answer: C
41.  
Answer: A
42.  
Answer: B
43.  
Answer: D
44.  
Answer: C
45.  
Answer: B
46.  
Answer: A
47.  
Answer: D
48.  
Answer: C
49.  
Answer:  $y = 3x$
50.  
Answer: A
51.  
Answer: D