

Midterm Review

Ch. 1-6

ANSWERS

Evaluate the expression for the given value of the variable.

1. $6y + 7$ when $y = 3$ 25

2. $4t + 6u$ when $t = 4$ and $u = 4$ 40

3. Evaluate the variable expressions when $a = 3$.

A. $3a^2$ 27

B. $(3a)^2$ 81

Evaluate the expression for the given values of the variables.

4. $(6k + m)^2$ when $k = 1$ and $m = 3$ 81

5. $(c)^3 + (2g)^2$ when $c = 2$ and $g = 3$ 44

Evaluate the expression.

6. $180 \div (3 \cdot 4 \div 2)$ 30

7. $3 \cdot 4^2 - 2$ 46

Evaluate the expression for the given value of the variable.

8. $4y^2 \div 4 + 3$ when $y = 3$ 12

9. $[(y - 2)^2 + 5] \div 3$ when $y = 4$ 3

10. Evaluate the expression for the given values of the variables.

$\frac{45 - 1}{x + 2y^2} \cdot 2$ when $x = 6$ and $y = 2$ 2

11. Find the difference.

$(-4) - (-5)$ 1

Find the product.

12. $8(-6)$ -48

13. $(-2)^4$ 16

14. Evaluate the expression for the given value of the variable.

$(5 - x)\left(\frac{3}{4}\right)$ when $x = -2$ $(5 - (-2))\frac{3}{4} = \frac{21}{4}$

15. Simplify the expression.

$7x + 2(x + 5)$ $9x + 10$

16. Evaluate the expression for the given value(s) of the variable(s).

$\frac{x}{y}$ when $x = -10$ and $y = 2$ -5

Solve the equation.

17. $13 = m - 3$ $m = 16$

18. $40 = 8y$ $y = 5$

19. $\frac{5}{7}x = 35$ $x = 49$

Solve the equation.

20. $\frac{x}{5} = 3$

$x = 15$

21. $4x + 8 = 21$

$x = \frac{13}{4}$

22. $9n + 20 - 11n = 38$

$n = -9$

23. $5n - 2(n - 2) = -11$

$n = -5$

24. $6z + 3 = 8z - 5$

$z = 4$

25. $3(2x - 1) - 11 = -2(1 - x)$

$x = 3$

Give answers to one decimal place where needed.

26. What is 18% of 180 miles?

32.4

27. 90 is 36% of what number?

250

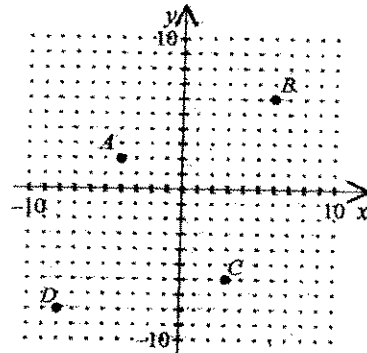
28. 50 people is what percent of 210 people?

23.8%

29. 90% of 30 is what number?

27

30. Write the ordered pairs that correspond to the given points.



A(-4, 2)

B(6, 6)

C(3, -6)

D(-8, -8)

Graph the linear equation by finding the x- and y-intercepts.

31. $4x + 3y = 12$

x-int: 3

y-int: 4

32. $3x + y = 3$

x-int: 1

y-int: 3

33. Find the slope of the line passing through the points A(5, -2) and B(2, 4).

$m = -2$

34. Find the slope of the line that contains (10, 2) and (2, 2).

$m = 0$

35. Find the slope and y-intercept of the line.

$9x + 3y = -54$

$m = -3$

$b = -18$

36. Find the slope and y-intercept of the line $y = -6x + 13$. Is the line parallel to

$y = -6x + 12$?

yes, parallel

37. Find the slope and y-intercept of the line

$y = 4x - 13$. Is the line parallel to

$y = 4x - 14$?

yes, parallel

38. Determine whether the lines are perpendicular.

$$y = 4x + 3, y = -4x - \frac{1}{3} \quad \text{NO}$$

39. Find the slope of a line perpendicular to the line $y = -4x + 3$.

$$m = \frac{1}{4}$$

40. Write an equation of the line with slope $-\frac{3}{2}$ and y -intercept -5 .

$$y = -\frac{3}{2}x - 5$$

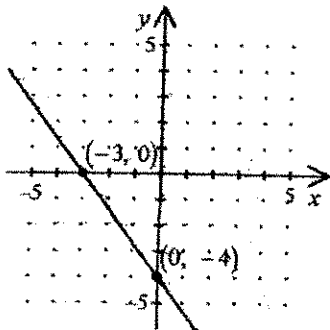
41. Use the point-slope form to write an equation of the line that passes through the given point and has the given slope.

$$(-7, 1), m = \frac{1}{2} \quad y - 1 = \frac{1}{2}(x + 7)$$

42. Write an equation for the line containing $(1, -1)$ and $(5, -21)$.

$$y + 1 = -5(x - 1)$$

43. Write an equation of the line shown on the graph.



$$y = -\frac{4}{3}x - 4$$

44. Write the slope-intercept form of the equation of the line passing through the point $(4, -5)$ and perpendicular to the

$$\text{line } y = \frac{2}{5}x - 3.$$

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

45. Solve and graph the inequality $4x - 1 \leq 2(x + 3)$

$$x \leq \frac{7}{2}$$



Solve the inequality.

46. $9 + \frac{1}{2}x \leq 11$ $x \leq 4$

47. $-8 \leq -2x - 8 \leq 4$

$$-6 \leq x \leq 0$$

48. $2x - 2 > -8$ or $3x - 4 < -1$

$$x > -3 \quad \text{or} \quad x < 1$$