

1. Simplify.

$$3\sqrt{48} - 5\sqrt{3}$$

- A)  $2\sqrt{3}$
  - B)  $3\sqrt{7}$
  - C)  $7\sqrt{3}$
  - D)  $-\sqrt{3}$
- 

2. Simplify Completely.

$$\sqrt{3}(\sqrt{21} + \sqrt{3})$$

- A)  $6\sqrt{7}$
  - B)  $3\sqrt{7} + \sqrt{3}$
  - C)  $3\sqrt{7} + 3$
  - D) 24
- 

3. Multiply. Give the answer in scientific notation.

$$\frac{\sqrt{7} \sqrt{56}}{\sqrt{8}}$$

- A)  $8\sqrt{7}$
  - B) 7
  - C)  $\sqrt{7}$
  - D) 1
- 

4. Simplify.

$$\frac{x^3 x^8}{(x^2)^4}$$

- A)  $x^{16}$
  - B)  $\frac{1}{x^3}$
  - C)  $x^3$
  - D)  $x^5$
-

5. Simplify completely.

$$(7x^2 - 3x + 4) - (-3x^2 + 5x + 9)$$

- A)  $4x^2 + 8x - 5$
  - B)  $10x^2 - 8x - 5$
  - C)  $10x^2 - 2x - 13$
  - D)  $4x^2 + 2x + 13$
- 

6. Multiply.

$$(4x - 3)(x^2 - 5x + 2)$$

- A)  $4x^3 - 23x^2 + 23x - 6$
  - B)  $4x^3 - 6$
  - C)  $4x^3 + 23x^2 - 23x - 6$
  - D)  $4x^3 - 17x^2 + 23x + 6$
- 

7. Simplify completely.

$$\frac{18x^7 - 24x^5 + 3x^3}{-3x^3}$$

- A)  $-6x^4 + 8x^2$
  - B)  $6x^4 - 8x^2 + 1$
  - C)  $-6x^4 + 8x^2 - 1$
  - D)  $6x^4 - 8x^2$
- 

8. Factor *completely*.

$$64x^2y - 196y^3$$

- A)  $4y(4x - 7y)(4x + 7y)$
  - B)  $4y(4x - 7y)^2$
  - C)  $4y(16x^2 - 49y^2)$
  - D)  $4(16x^2y - 49y^3)$
-

9. Which of the following is a factor of the polynomial?

$$5x^2 + 7x + 2$$

- A)  $x - 1$
  - B)  $5x + 2$
  - C)  $5x - 2$
  - D)  $2x + 5$
- 

10. Which of the following is a factor of the polynomial?

$$3x^2 - 4xy - 6x + 8y$$

- A)  $3x + 2y$
  - B)  $3x - 4y$
  - C)  $3x - 2y$
  - D)  $3x + 4y$
- 

11. If  $n$  represents a number, which equation is a correct translation of the sentence?

**24 is 13 less than 3 times a number.**

- A)  $24 = 13 - 3n$
  - B)  $24 = 3(13 - n)$
  - C)  $24 = 3(n - 13)$
  - D)  $24 = 3n - 13$
- 

12. Solve for  $x$ .

$$8(3 - x) = 2x - 16$$

- A)  $x = -4$
  - B)  $x = 4$
  - C)  $x = 2$
  - D)  $x = -2$
-

13. What is the value of the  $x$ -coordinate of the solution to the system of equations?

$$3x - 2y = 5$$

$$2x + y = 8$$

- A)  $x = 3$
  - B)  $x = -3$
  - C)  $x = 2$
  - D)  $x = -2$
- 

14. Solve for  $h$ .

$$g = 3h + i$$

- A)  $h = \frac{g-i}{3}$
  - B)  $h = \frac{g}{3} - i$
  - C)  $h = 3(g - i)$
  - D)  $h = \frac{g+i}{3}$
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15. Find all the solutions to the equation.

$$6b^2 + 18b = 0$$

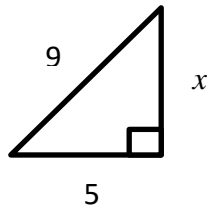
- A)  $b = 0$  or  $b = 3$
  - B) *only*  $b = -3$
  - C)  $b = 0$  or  $b = -3$
  - D) *only*  $b = 3$
- 

16. Solve for  $x$ .

$$\frac{2x}{3} + \frac{1}{4} = \frac{5}{12}$$

- A)  $x = \frac{1}{4}$
  - B)  $x = 4$
  - C)  $x = -\frac{1}{4}$
  - D)  $x = -4$
-

17. What is the value of  $x$  in the right triangle?

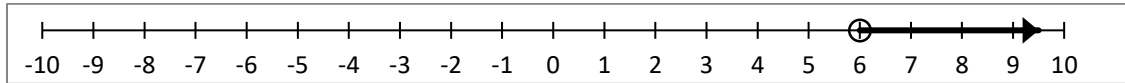


- A)  $14\sqrt{2}$
- B) 8
- C)  $2\sqrt{17}$
- D)  $2\sqrt{14}$

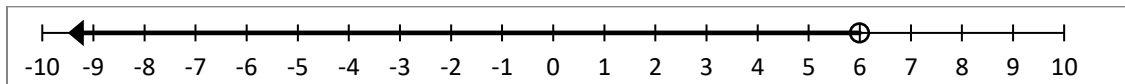
18. Find the solution to the inequality.

$$4x + 7 > 9x - 23$$

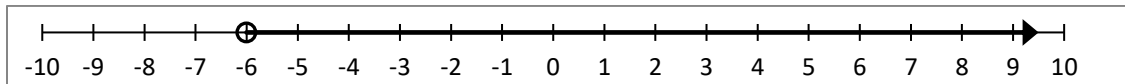
A)



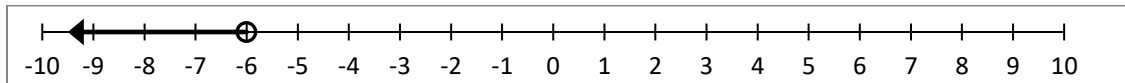
B)



C)



D)



19. Given  $a = -2$  and  $b = -1$ , evaluate the expression given below.

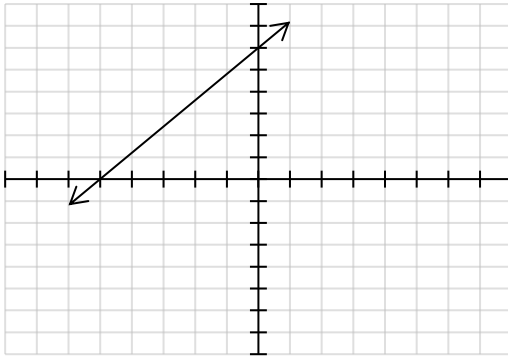
$$a^2b - 3ab + b^2$$

- A) -2
- B) -9
- C) -1
- D) -11

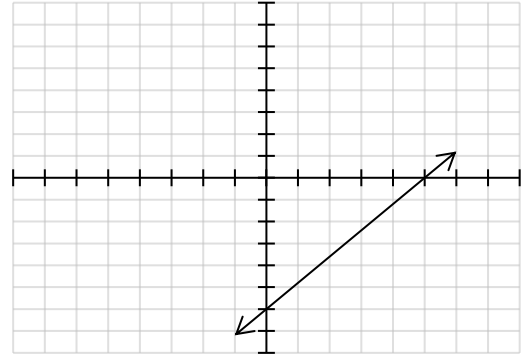
20. Which of the following is the graph of the equation?

$$6x - 5y = 30$$

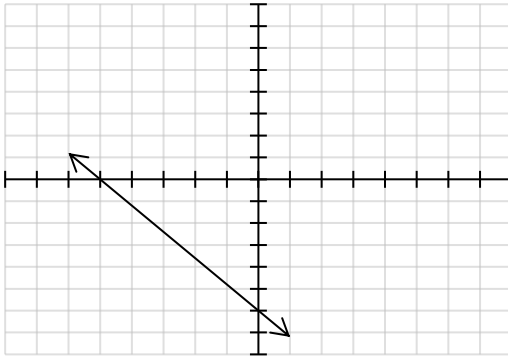
A)



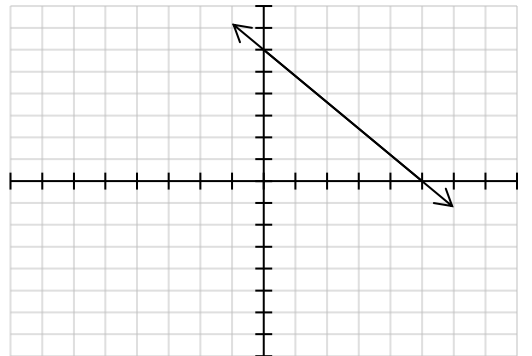
C)



B)



D)



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21. Find the equation of the line passing through the points  $(5, -8)$  and  $(3, 2)$ . Write the equation in slope-intercept form.

- A)  $y = -5x - 33$
  - B)  $y = -5x + 17$
  - C)  $y = 3x - 23$
  - D)  $y = -3x + 7$
-

22. Find the equation of the horizontal line passing through the point  $(-4, 7)$ .

- A)  $y = x + 7$
  - B)  $x = -4$
  - C)  $y = 7$
  - D)  $y = -\frac{4}{7}x$
- 

23. Find the slope and y-intercept of the graph of the equation?

$$5x - 9y = 7$$

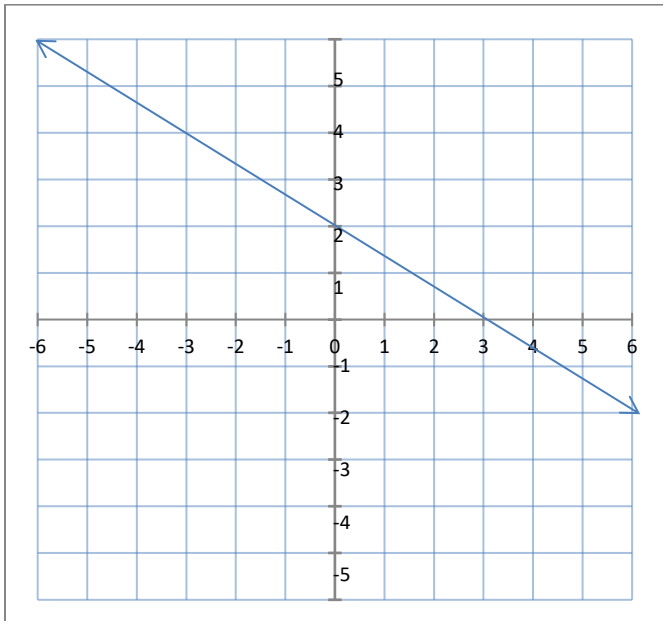
- A) Slope =  $\frac{9}{5}$  and y-intercept =  $(0, \frac{9}{7})$
  - B) Slope =  $-\frac{9}{5}$  and y-intercept =  $(0, \frac{9}{7})$
  - C) Slope =  $-\frac{5}{9}$  and y-intercept =  $(0, -\frac{7}{9})$
  - D) Slope =  $\frac{5}{9}$  and y-intercept =  $(0, -\frac{7}{9})$
- 

24. Simplify.

$$2^{-7}2^3$$

- A)  $-16$
  - B)  $\frac{1}{16}$
  - C)  $8$
  - D)  $\frac{1}{8}$
-

25. What is the slope of the line graphed below?



- A)  $\frac{2}{3}$
  - B)  $\frac{3}{2}$
  - C)  $-\frac{2}{3}$
  - D)  $-\frac{3}{2}$
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