

1. Simplify.

$$6\sqrt{2} - \sqrt{12} + 5\sqrt{8}$$

- A) $16\sqrt{2} - 2\sqrt{3}$
 - B) $16\sqrt{3} - 3\sqrt{2}$
 - C) $20\sqrt{2}$
 - D) $4\sqrt{2} - 2\sqrt{3}$
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2. Simplify Completely.

$$\sqrt{3}(4 - 2\sqrt{6})$$

- A) $4\sqrt{3} - 6\sqrt{2}$
 - B) $2\sqrt{3} - 6\sqrt{2}$
 - C) $-2\sqrt{6}$
 - D) $4\sqrt{3} - 6$
-

3. Simplify.

$$\frac{\sqrt{5} \sqrt{65}}{\sqrt{13}}$$

- A) $5\sqrt{13}$
 - B) 5
 - C) 1
 - D) $13\sqrt{5}$
-

4. Simplify.

$$\frac{x^{10}y^{-5}}{(x^2)^3}$$

- A) $\frac{x^5}{y^5}$
- B) $\frac{y^5}{x^4}$
- C) $\frac{x^4}{y^5}$
- D) x^5y^5

5. Simplify completely.

$$(-5a^2 + 3a - 6) - (4a^2 + 2a - 3)$$

- A) $-a^2 + a - 3$
 - B) $-9a^4 - a^2 - 3$
 - C) $-9a^2 + 5a - 3$
 - D) $-9a^2 + a - 3$
-

6. Multiply.

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

- A) $8x^3 - 20x^2 - 16x + 12$
 - B) $8x^3 - 26x^2 - 31x + 12$
 - C) $8x^3 - 26x^2 - x + 12$
 - D) $8x^2 - 5x + 12$
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7. Simplify completely.

$$\frac{21x^3y^2 - 28x^2y^2 + 7xy^2}{-7xy^2}$$

- A) $-3x^2 + 4x$
 - B) $-3x^2 + 4x - 1$
 - C) $-3x^4y^4 + 4x^3y^4 - x^2y^4$
 - D) $21x^3y^2 - 28x^2y^2$
-

8. Factor *completely*.

$$6x^3y^2 - 24xz^2$$

- A) $6x(xy - 2z)^2$
 - B) $6x(x^2y^2 - 4z^2)$
 - C) $6(x^3y^2 - 4xz^2)$
 - D) $6x(xy + 2z)(xy - 2z)$
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9. Which of the following is a factor of the polynomial?

$$4x^2 - 13x + 10$$

- A) $x + 5$
 - B) $4x - 2$
 - C) $4x + 5$
 - D) $x - 2$
-

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

$$8sx + 28sy - 6tx - 21ty$$

- A) $4s - 3t$
 - B) $2x - 7y$
 - C) $2x + 7t$
 - D) $4s + 3t$
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11. Translate the sentence into an equation.

"Eight less than three times a number is equal to the sum of a number and four."

- A) $8 - 3x = x + 4$
 - B) $3x - 8 = x + 4$
 - C) $8 - 3x = 4x$
 - D) $3x - 8 = 3(x + 4)$
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12. Solve for x .

$$-3(x - 4) + 8 = 4(2x - 1) - 9$$

- A) $x = \frac{11}{8}$
 - B) $x = -3$
 - C) $x = -\frac{11}{9}$
 - D) $x = 3$
-

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

$$\begin{aligned}3x + y &= 3 \\ -2x + 2y &= -10\end{aligned}$$

- A) $x = -3$
 - B) $x = 2$
 - C) $x = -7$
 - D) $x = -2$
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14. Solve for t .

$$v = v_0 + at$$

- A) $t = \frac{v - v_0}{a}$
 - B) $t = \frac{v_0 - v}{a}$
 - C) $t = v_0 - v - a$
 - D) $t = av - v_0$
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15. Find all the solutions to the equation.

$$5n^2 + 15n = 0$$

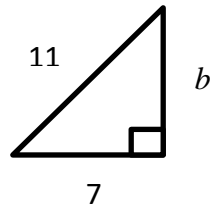
- A) $n = 0$ or $n = 3$
 - B) *only* $n = -3$
 - C) $n = 0$ or $n = -3$
 - D) *only* $n = 3$
-

16. Solve for x .

$$\frac{x}{3} + \frac{2}{5} = \frac{4}{15}$$

- A) $x = \frac{2}{3}$
 - B) $x = 2$
 - C) $x = -\frac{2}{5}$
 - D) $x = -2$
-

17. What is the value of b in the right triangle?

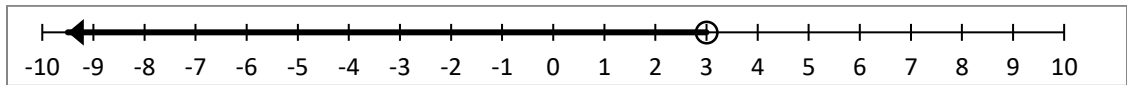


- A) $2\sqrt{6}$
- B) $2\sqrt{2}$
- C) $6\sqrt{2}$
- D) $3\sqrt{3}$

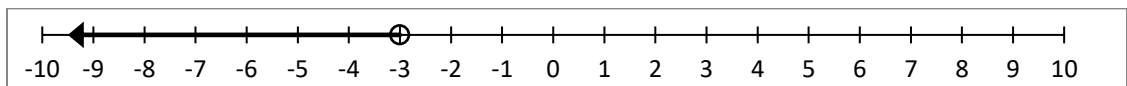
18. Find the solution to the inequality.

$$-4(3x - 5) < 2(x - 11)$$

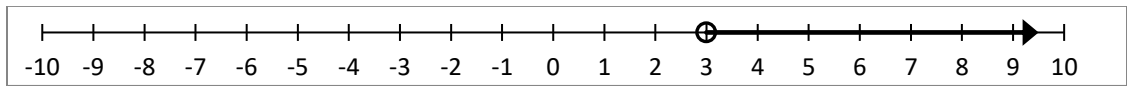
A)



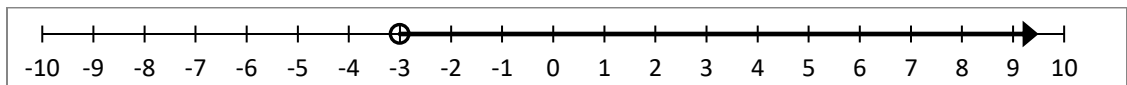
B)



C)



D)



19. Given $x = -3$ and $y = 2$, evaluate the expression given below.

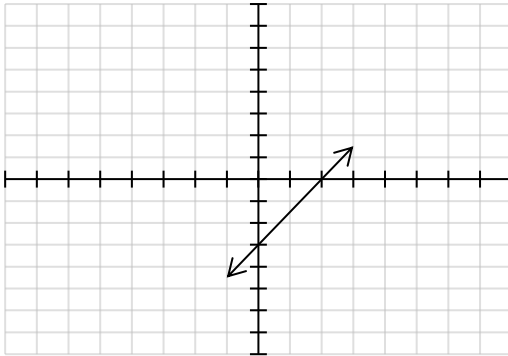
$$x^2 - 2xy - 3y^2$$

- A) 12
- B) -9
- C) 30
- D) 9

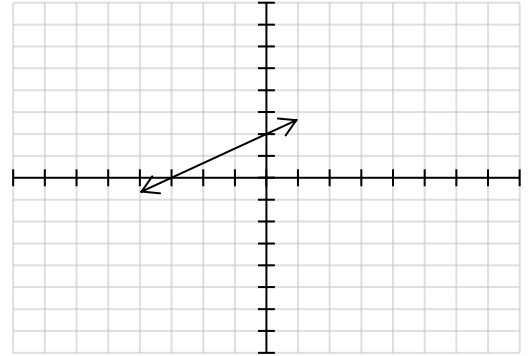
20. Which of the following is the graph of the equation?

$$9x - 6y = 18$$

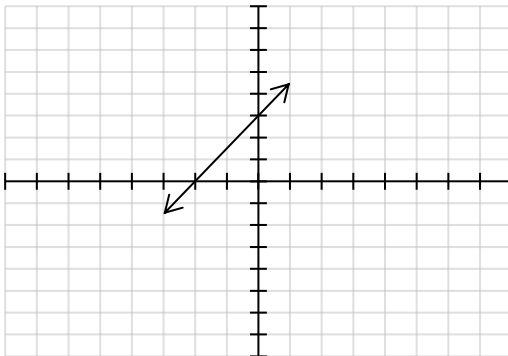
A)



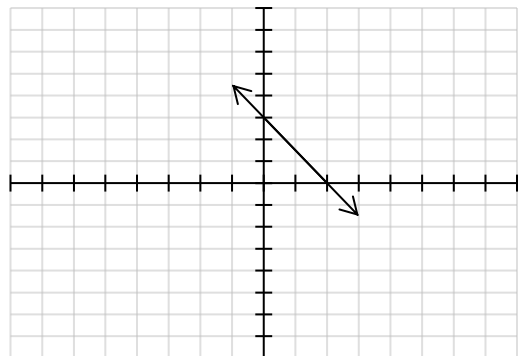
C)



B)



D)



21. Find the equation of the line passing through the points $(-5, -6)$ and $(-7, 4)$. Write the equation in slope-intercept form.

- A) $y = \frac{1}{6}x - \frac{31}{6}$
 - B) $y = -\frac{1}{5}x + \frac{13}{5}$
 - C) $y = -5x + 39$
 - D) $y = -5x - 31$
-

22. Find the equation of the vertical line that passes through the point $(-2, 5)$.

- A) $x = -2$
 - B) $y = x + 5$
 - C) $y = -\frac{5}{2}x$
 - D) $y = 5$
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23. Find the slope and y-intercept of the graph of the equation?

$$7y - 4x = 21$$

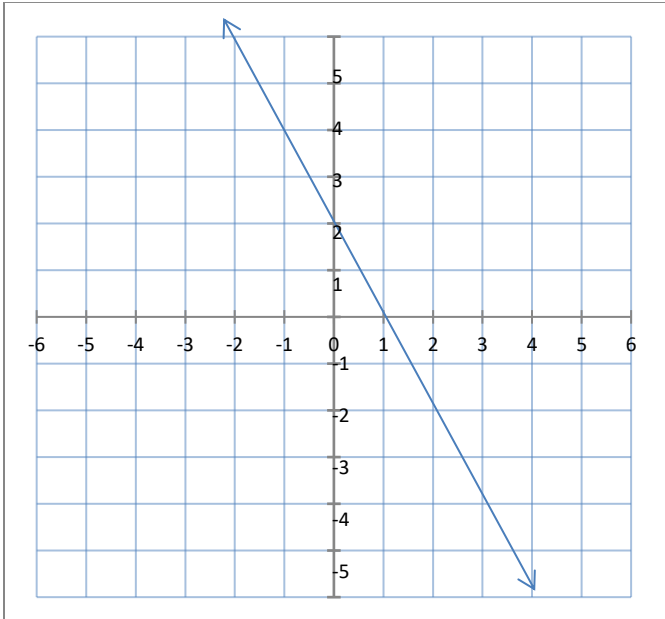
- A) Slope = $-\frac{4}{7}$ and y-intercept = $(0, 3)$
 - B) Slope = $\frac{4}{7}$ and y-intercept = $(0, 21)$
 - C) Slope = $\frac{7}{4}$ and y-intercept = $(0, -3)$
 - D) Slope = $\frac{4}{7}$ and y-intercept = $(0, 3)$
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24. Simplify.

$$\frac{a^{-4}}{a^{-2}}$$

- A) a^2
 - B) $-a^2$
 - C) $\frac{1}{a^2}$
 - D) $-\frac{1}{a^2}$
-

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



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