Algebra 2 Pre-Test

Please do not write on this test. A calculator is not allowed.

1. Simplify the expression:

$$4+36\div(10-8)^2\cdot 3+7$$

A. 130

B. 100

C. 38

D. 37

2. Evaluate the expression $-4x+5y-14$ when $x=0$ and $y=\frac{3}{5}$.

A. –1

B. –11

C. –15

D. –51

3. Simplify the expression:

$$1+4(2x-3)-x$$

A. $9x-3$

B. $9x-15$

C. $7x-2$

D. $7x-11$

4. Simplify the expression:

$$7x^2-6+4x+7-5x^2+x$$

A. $2x^2+5x+1$

B. $2x^2+4x+1$

C. $12x^2+5x+1$

D. $12x^2+4x+1$

5. A function is defined as

$$f(x)=-3x^2+2x-5$$

What is $f(-1)$?

A. –16

B. –10

C. –6

D. –4

6. Solve the equation for x:

$$\frac{x}{3}+7=-5$$

A. –36

B. –22

C. –6

D. –4

7. Solve the equation for x:

$$5(x-2)+4(3+x)=20$$

A. –2

B. $-\frac{2}{9}$

C. $\frac{5}{3}$

D. 2

8. Which graph represents the solution to the inequality $x + 6 \leq -9$?

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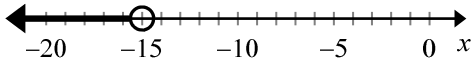

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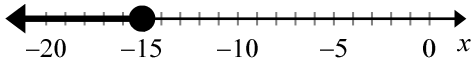

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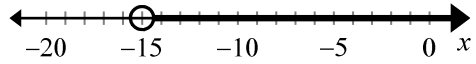

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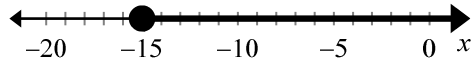


9. Solve the inequality for x:

$5 - 3x < 20$

A. $x > -\frac{25}{3}$

B. $x > -5$

C. $x < -\frac{25}{3}$

D. $x < -5$

10. What is the solution set of $|3x - 2| = 7$?

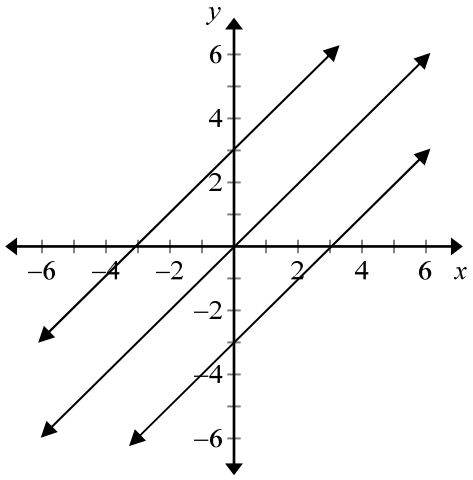
A. $\{3\}$

B. $\{-3, 3\}$

C. $\left\{-\frac{5}{3}, 3\right\}$

D. $\left\{-\frac{5}{3}\right\}$

11. Which statement is true about the characteristics of the three lines in the graph?



A. They have the same equation.

B. They have the same slope.

C. They have the same x-intercept.

D. They have the same y-intercept.

12. Calculate the slope of the line that passes through the points $(-4,-7)$ and $(1,-7)$.

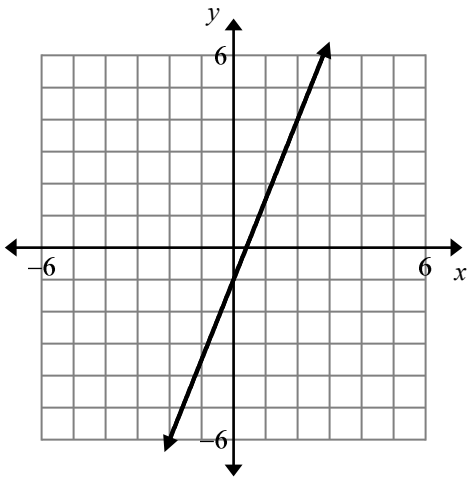
A. undefined

B. 0

C. $\frac{14}{5}$

D. $\frac{14}{3}$

13. Determine the slope of the line in the graph.



A. $\frac{2}{5}$

B. $\frac{5}{2}$

C. $-\frac{2}{5}$

D. $-\frac{5}{2}$

14. Which describes the relationship between the two lines?

$$y = 2x - 3$$

$$y = \frac{1}{2}x + 3$$

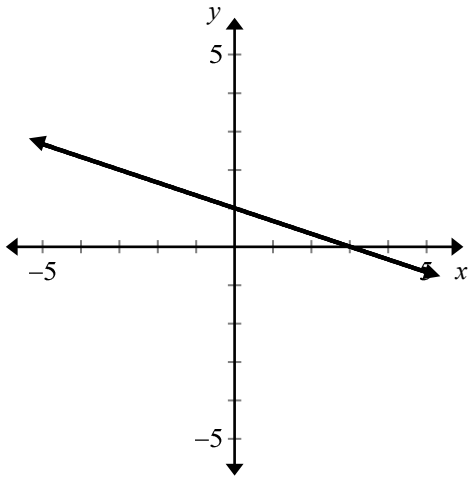
A. The lines are parallel.

B. The lines are perpendicular.

C. The lines intersect, but are not perpendicular.

D. The lines are the same.

15. Use the graph:



What is the equation of the line in the graph?

A. $y = -\frac{1}{3}x + 1$

B. $y = -\frac{1}{3}x + 3$

C. $y = -3x + 1$

D. $y = -3x + 3$

16. Which equation is $y + 5 = \frac{1}{3}(x - 9)$ in slope-intercept form?

A. $y = \frac{1}{3}x - 14$

B. $y = \frac{1}{3}x - 8$

C. $y = \frac{1}{3}x - 4$

D. $y = \frac{1}{3}x + 2$

17. Which equation has a slope of $-\frac{2}{7}$ and contains the point $(5,-6)$?

A. $y+6=-\frac{2}{7}(x-5)$

B. $y-6=-\frac{2}{7}(x+5)$

C. $y+5=-\frac{2}{7}(x-6)$

D. $y-5=-\frac{2}{7}(x+6)$

18. To divide $\frac{7}{x+2}$ by $\frac{x-2}{14}$, you can multiply $\frac{7}{x+2}$ by which of the following:

A. $\frac{x+2}{7}$

B. $14(x-2)$

C. $0.14x-0.28$

D. $\frac{14}{x-2}$

19. What is 0.00375 expressed in scientific notation?

A. 3.75×10^{-3}

B. 3.75×10^{-2}

C. 3.75×10^{2}

D. 3.75×10^{3}

20. If $z^t \cdot z^5 = z^{15}$, what is the value of t?

A. 3

B. 10

C. 20

D. 75

21. Which expression is equivalent to $(a^3b^4c^6)(4ac^3)^2$?

A. $16a^5b^4c^{12}$

B. $16a^3b^4c^{12}$

C. $8a^3b^4c^{11}$

D. $4a^5b^4c^{12}$

22. Evaluate the expression $3^0(3^{-2})$.

A. –9

B. 0

C. $\frac{1}{9}$

D. $\frac{1}{81}$

23. Which is an estimate of $\sqrt{75}$ to the nearest whole number?

A. 10
B. 9
C. 8
D. 7

24. What is $\sqrt{45}$ in simplest radical form?

A. $9\sqrt{5}$
B. $5\sqrt{9}$
C. $5\sqrt{3}$
D. $3\sqrt{5}$

25. Multiply the binomials:

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

A. $12x^2+23x-10$
B. $12x^2+7x-10$
C. $12x^2-7x-10$
D. $12x^2-23x-10$

26. Expand the expression $(5x-6)^2$.

A. $25x^2+36$
B. $25x^2-36$
C. $25x^2-60x-36$
D. $25x^2-60x+36$

27. Which shows the correct form of the Quadratic Formula?

A. $x=\dfrac{b\pm\sqrt{(b)^2+4(a)(c)}}{2(a)}$

B. $x=\dfrac{-b\pm\sqrt{(b)^2+4(a)(c)}}{2(a)}$

C. $x=\dfrac{-b\pm\sqrt{(b)^2-4(a)(c)}}{2(a)}$

D. $x=\dfrac{b\pm\sqrt{(b)^2-4(a)(c)}}{2(a)}$

28. 15% of what number is 9?

A. 60
B. 45
C. 13.5
D. 1.35

29. Which equation has roots of –3 and 5?

A. $(x-3)(x+5)=0$
B. $(x+3)(x-5)=0$
C. $(x-3)(x-5)=0$
D. $(x+3)(x+5)=0$

30. Factor $2p^2-9p+10$:

A. $(2p-5)(p-2)$

B. $(p-5)(p-2)$

C. $(p-4)(p+10)$

D. $(p-1)(p+20)$

31. Simplify the rational expressions:

$$\frac{2x+4}{x^2-4}$$

A. $-\frac{1}{2}$

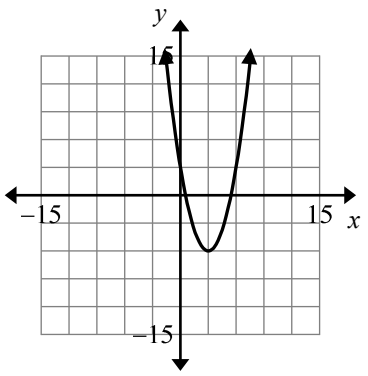
B. $\frac{2}{x}$

C. $\frac{2}{x-2}$

D. -1

32. Which of the following is the graph of $y=-x^2-6x+3$?

A.



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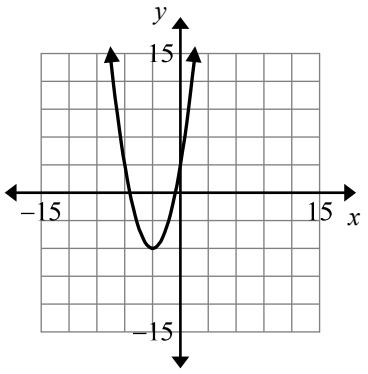

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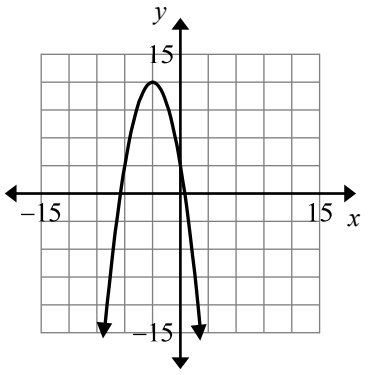

D.