

Name _____



ACA 4 – Review (2)

1. Select the compound inequality shown on the graph



- A. $x > -3$ and $x \leq 2$, or $-3 < x \leq 2$
B. $x \geq -3$ and $x < 2$, or $-3 \leq x < 2$
C. $x \leq -3$ and $x > 2$, or $-3 \leq x > 2$
D. $x \geq -3$ and $x < 3$, or $-3 \leq x < 3$
2. The cost of having one pizza delivered is \$14. Each additional pizza costs \$9 more.

Part A: What is the explicit formula to represent the situation?

- A. $a_n = 9 + 14(n - 1)$ B. $a_n = 14 + 9(n - 1)$
C. $a_n = 14 - 9(n - 1)$ D. $a_n = 23 + 9(n - 1)$

Part B: What is the recursive formula to represent the situation?

- A. $a_n = a_{n-1} + 14$; $a_1 = 9$
B. $a_n = a_{n-1} + 2$; $a_1 = 9$
C. $a_n = a_{n-1} + 9$; $a_1 = 14$
D. $a_n = a_{n-1} + 2$; $a_1 = 14$

3. Find the solution to the systems of equations.

$$\begin{aligned}-x - 3y &= -7 \\ -3x - 7y &= -19\end{aligned}$$
Solution: _____

4. Complete the sentence.

The vertex of the graph of $f(x) = 0.25 |x - 3|$ is $V(_____, _____)$

Tell graph opens *upward* or *downward*: _____.

5. Simplify: $(-3x - 5) - (5x^2 - 2x + 8)$. Choose the standard form of the answer.
- A. $-5x^2 - 5x + 3$ B. $-8x^2 - 2x + 3$
C. $-8x^2 - 2x + 3$ D. $-5x^2 - x - 13$
6. Find the product of $(6x^2 + 8)(3x^2 - 5x + 7)$
- A. $18x^4 - 5x + 56$
B. $18x^4 + 30x^3 + 66x^2 + 40x + 56$
C. $18x^4 - 30x^3 + 66x^2 - 40x + 56$
D. $18x^2 - 5x + 15$
7. What is the product of $(4x - 3)(4x + 3)$?
- A. $16x^2 + 9$ B. $16x^2 - 9$
C. $16x^2 - 12x - 9$ D. $16x^2 - 24x - 9$
8. Which of the following shown has a GCF of $4x^3y$ with $16x^4y$?
- A. $4xy$ B. $16x^3y$
C. $4x^3$ D. $4x^3y$
9. What is the factored form of $x^2 - x - 42$?
- A. $(x - 7)(x - 6)$ B. $(x - 7)(x + 6)$
C. $x(x - 1) - 42$ D. $(x - 10)(x + 2)$
10. Factor $15y^2 + 10y - 40$
- A. $5(y + 4)(3y - 2)$ B. $(5y - 10)(3y + 4)$
C. $5(y - 2)(3y + 4)$ D. $5(y + 2)(3y - 4)$
11. Factor the perfect square trinomial $16y^2 - 24y + 9$
- A. $(4y - 6)(4y - 3)$ B. $(4y + 3)(4y - 3)$
C. $(4y - 3)^2$ D. $(4y + 3)^2$

12. What is the vertex of the function $f(x) = 2(x - 9)^2 + 5$

- A. $(-9, 5)$ B. $(9, 5)$
C. $(2, 5)$ D. $(-18, 5)$

13. The graph of h is a translation 4 units right and 2 units down from the graph of $f(x) = x^2$. What is the vertex form of this function?

- A. $h(x) = (x - 4)^2 + 2$
B. $h(x) = (x - 4)^2 - 2$
C. $h(x) = (x + 4)^2 - 2$
D. $h(x) = (x - 2)^2 + 4$

14. The function $h(t) = -16t^2 + 24t$ models the height, in feet, of a kangaroo t seconds after it jumps. What is the maximum height of the jump?

- A. 9 ft B. 18 ft
C. 27 ft D. 36 ft

15. Which choice includes all the solutions to $x^2 + 2x - 15 = 0$?

- A. 5, 3 B. 0, 2
C. 3, -5 D. -3, 5

16. What is the solution of $x^2 - 4x = 2$

- A. $2 \pm \sqrt{6}$ B. $4 \pm 2\sqrt{6}$
C. No Solution D. $2 \pm \sqrt{3}$

17. Which is equivalent to $(3\sqrt{10x^3})(5\sqrt{10x^5})$

- A. $15x^4$ B. $25x^8$
C. $150x^8$ D. $150x^4$

18. Which are the solutions of $7x^2 - 11x - 6 = 0$

- A. $2, -\frac{3}{7}$ B. $2, \frac{5}{3}$
C. $-2, \frac{3}{7}$ D. $8, \frac{1}{7}$

19. Name the two solutions of $36 = (x - 5)^2$.

Solutions = _____ and _____

20. Use the quadratic formula to solve $2x^2 + 4x = 1$. Which of the following are the solutions to the nearest hundredth?

- A. 0.22 and -2.22
- B. 0.45 and -4.45
- C. 2.22 and -0.22
- D. -0.29 and -1.71