

Name: _____ Date: _____ Period: _____

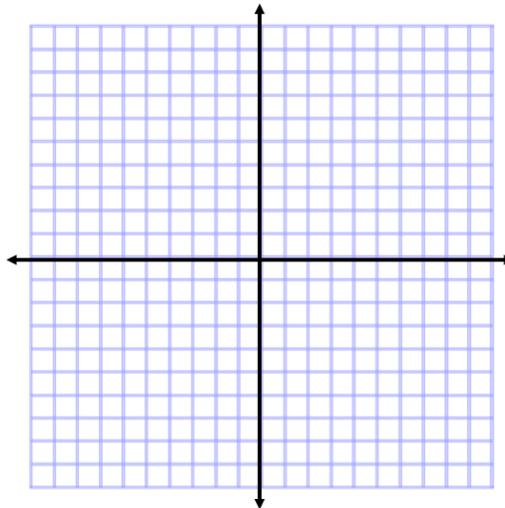
ALGEBRA 2

QUADRATIC FUNCTIONS AND EQUATIONS

CHAPTER 4 TEST

1. Use the function $y = (x + 4)^2 - 3$ to complete the following:

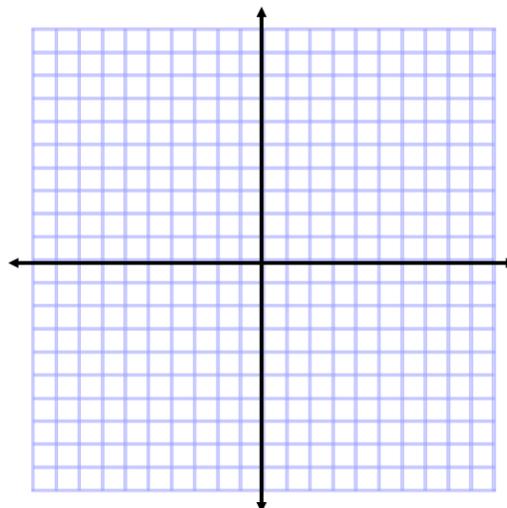
- a. Graph the function.
- b. Identify the vertex.
- c. Identify the axis of symmetry.
- d. Identify the maximum or minimum.



e. Describe each transformation from the parent function $y = x^2$.

2. Use the function $y = x^2 - 4x + 4$ to complete the following:

- a. Graph the function.
- b. Identify the vertex.
- c. Identify the axis of symmetry.
- d. Identify the maximum or minimum.



e. Describe each transformation from the parent function $y = x^2$.

What is the expression in factored form?

3. $x^2 - 8x + 15$

4. $3x^2 + 27x + 54$

5. $x^2 - 9$

Solve the quadratic equation by **FACTORING**.

6. $x^2 + 11x = -24$

Solve the quadratic equation by **SQUARE ROOT METHOD**.

7. $2x^2 = 10$

Solve the quadratic equation by **COMPLETING THE SQUARE**.

8. $x^2 + 10x + 15 = 0$

Use the **QUADRATIC FORMULA** to solve the equation.

9. $x^2 - 7x = 9$

Simplify the number using the imaginary unit i .

10. $\sqrt{-81}$

11. $\sqrt{-27}$

Simplify the expression.

12. $(4 - i) + (-3 - 4i)$

13. $(2 + 2i) - (6 - 6i)$

14. $(-i)(8i)$

15. $(-2 + 4i)(-2 - 5i)$

Solve the quadratic equation.

16. $16x^2 = -9$

Bonus: Solve by COMPLETING THE SQUARE.

$9x^2 - 12x - 2 = 0$