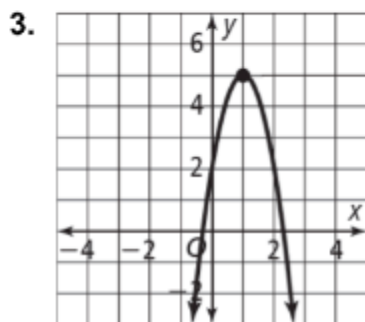
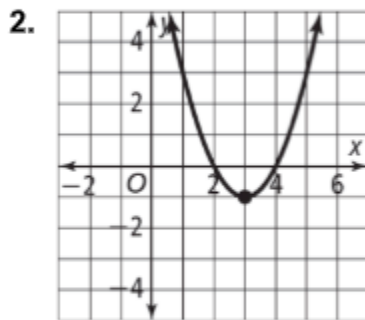
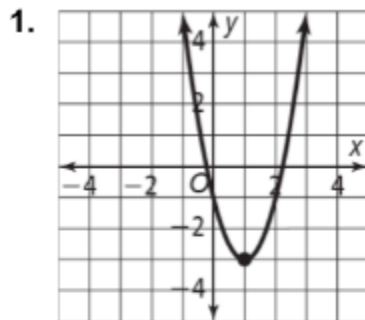


Name:

10th Grade Math Worksheet
Final Review : Quadratic Functions in Vertex Form

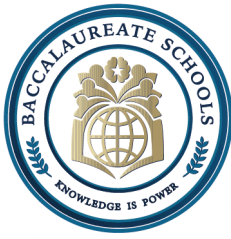
Teacher : Aseel Zaghloul

Question #1: Identify the vertex, the axis of symmetry, and the direction of the graph for each of the following parabolas.



Question #2: Write the function for the graphs in Exercises 1–3 in vertex form.

4. Graph in Exercise 1
5. Graph in Exercise 2
6. Graph in Exercise 3



Question#3:

How does the value of a , h , or k affect the vertex for the graph of each function compared to the parent function $f(x) = x^2$?

7. $g(x) = (x - 8)^2$

8. $h(x) = (x + 4)^2 + 12$

9. $j(x) = -\frac{1}{2}x^2 + 8$

Identify the vertex of the graph of each function.

10. $y = 4x^2 - 2$

11. $y = -2(x + 4)^2 - 6$

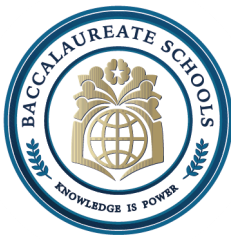
12. $y = x^2 + 5$

13. $y = (x - 12)^2$

14. $y = -9(x + 3)^2 - 3$

15. $y = -3x^2 - 7$

16. Graph the function $f(x) = 4(x - 2)^2 + 4$. Find the vertex and axis of symmetry.



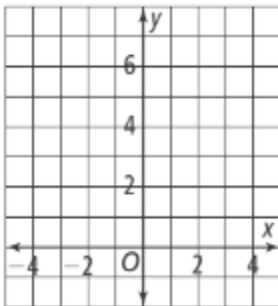
Name:

10th Grade Math Worksheet
Final Review : Quadratic Functions in Standard form

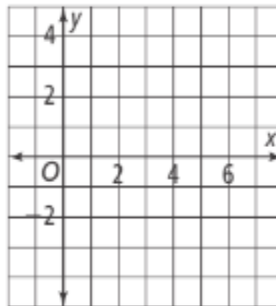
Teacher : Aseel Zaghloul

Graph each function. Identify the y-intercept, axis of symmetry, and vertex of each function. Does the vertex represent a maximum or minimum value?

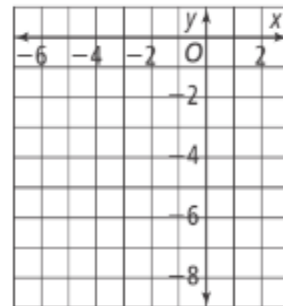
1. $f(x) = x^2 + 1$



2. $f(x) = -x^2 + 4x - 2$



3. $f(x) = 2x^2 + 4x - 6$



Find the axis of symmetry using the formula $x = \frac{-b}{2a}$.

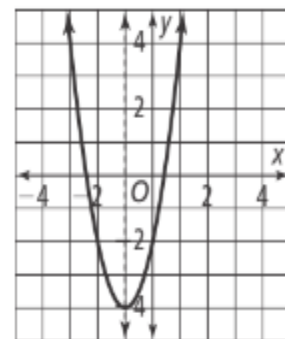
4. $f(x) = -9x^2 + 1$

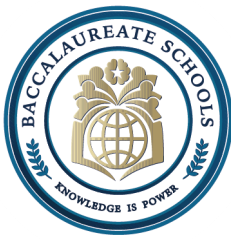
5. $f(x) = -2x^2 + 8x - 9$

6. $f(x) = 4x^2 + 24x + 131$

7. The parabola shown has the form $y = ax^2 + bx + c$.

- What is the axis of symmetry?
- Look at the width of the parabola to find a .
- Use the formula $x = \frac{-b}{2a}$ to find b .
- What is the equation of the parabola?





Name:

10th Grade Math Worksheet
Final Review : Solving Quadratic Equations

Teacher : Aseel Zaghloul

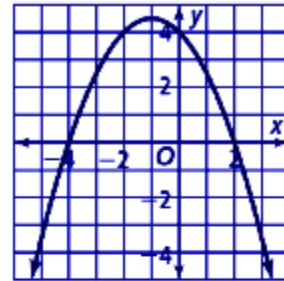
Question #1: Solve by graphing:

1. Use the graph to find the solutions of

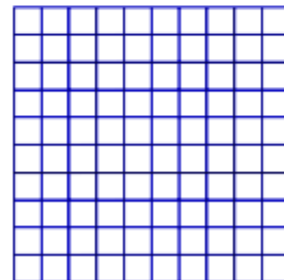
$$-\frac{1}{2}x^2 - x + 4 = 0.$$

2. The equation $ax^2 + bx + c = 0$ has no real solutions. Which statement about the graph of $f(x) = ax^2 + bx + c$ could be true?

- (A) It could pass through the origin.
(B) Its vertex could be at $(-6, 0)$.
(C) It could have a maximum at $(-3, 2)$.
(D) It could have a minimum at $(0, 4)$.



3. Solve the equation $x^2 - 2x - 3 = 0$ by graphing.



Question #2: Solve by factoring:

Solve each equation.

1. $(x - 5)(x + 7) = 0$

2. $(2x - 7)(5x + 3) = 0$

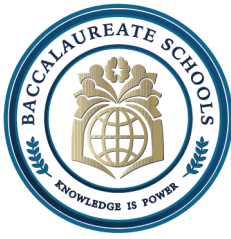
3. $x(x + 4)(5 - 2x) = 0$

Solve each equation by factoring.

4. $x^2 - 4x - 21 = 0$

5. $x^2 + 100 = 20x$

6. $6x^2 = x + 15$



Question #3 : Solve by using square root:

Solve each equation by inspection.

1. $x^2 = 64$

2. $x^2 = -169$

3. $x^2 = 108$

4. $x^2 = 200$

Solve each equation.

5. $4x^2 = 81$

6. $-3x^2 = -54$

7. $-7x^2 = 49$

8. $\frac{1}{5}x^2 = 80$

Question #3 : Solve the following by Completing the square then by quadratic formula for the quadratic expression:

$$X^2+6x-8$$

- Complete the square:
- Quadratic formula: