SPARK Hybrid Education Center

Mathematics | Upper Level

Quadratics: Parabolas & Standard Form

Name: _____ Date: _____ Score: _____

UNIT TOPICS

* Standard form: y = ax^2 + bx + c
* Vertex, axis of symmetry, direction of opening
* Vertex form: y = a(x-h)^2 + k

PRACTICE PROBLEMS - Show all work

1. In y = 3x^2 - 6x + 1, what is a? ___ b? ___ c? ___

2. Does y = -2x^2 + 4x open up or down? Explain.

3. Find the vertex of y = x^2 - 4x + 3 using x = -b/2a: ___

4. What is the axis of symmetry for y = x^2 - 6x + 9? ___

5. Convert to vertex form: y = x^2 - 4x + 5: ___

6. In vertex form y = 2(x-3)^2 + 1, what is the vertex? ___

7. True or False: The vertex is always on the y-axis. ___

8. If a > 0, the parabola opens ___. If a < 0, it opens ___.

9. Find the y-intercept of y = 2x^2 - 3x + 5 (let x = 0): ___

10. Sketch a parabola opening upward with vertex at (2, -3).

TEACHER ANSWER KEY - Quadratics: Parabolas & Standard Form

Answers (accept equivalent responses and correct reasoning):

1. [Grade based on correct application of concept taught this week]
2. [Grade based on correct application of concept taught this week]
3. [Grade based on correct application of concept taught this week]
4. [Grade based on correct application of concept taught this week]
5. [Grade based on correct application of concept taught this week]
6. [Grade based on correct application of concept taught this week]
7. [Grade based on correct application of concept taught this week]
8. [Grade based on correct application of concept taught this week]
9. [Grade based on correct application of concept taught this week]
10. [Grade based on correct application of concept taught this week]