

Graphing Quadratic Equations - Practice Worksheet

Name: _____ Date: _____

Instructions: For each equation, identify the vertex, axis of symmetry, and y-intercept, then sketch the parabola on the provided coordinate grid. Show all working.

1. $y = x^2$

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2. $y = x^2 + 2$

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3. $y = x^2 - 4$

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4. $y = (x - 3)^2$

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

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

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7. $y = x^2 + 4x + 3$

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8. $y = -x^2 + 6x - 5$

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9. $y = 2x^2 + 8x + 6$

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10. $y = -3x^2 + 12x - 9$

.....

Answer Key

1. Vertex: (0, 0); Axis: $x = 0$; y-int: (0, 0); opens up
2. Vertex: (0, 2); Axis: $x = 0$; y-int: (0, 2); opens up
3. Vertex: (0, -4); Axis: $x = 0$; y-int: (0, -4); x-ints: (2, 0) and (-2, 0); opens up
4. Vertex: (3, 0); Axis: $x = 3$; y-int: (0, 9); opens up
5. Vertex: (0, 4); Axis: $x = 0$; y-int: (0, 4); x-ints: (2, 0) and (-2, 0); opens down
6. Vertex: (1, -2); Axis: $x = 1$; y-int: (0, 0); x-ints: (0, 0) and (2, 0); opens up
7. Vertex: (-2, -1); Axis: $x = -2$; y-int: (0, 3); x-ints: (-1, 0) and (-3, 0); opens up
8. Vertex: (3, 4); Axis: $x = 3$; y-int: (0, -5); x-ints: (1, 0) and (5, 0); opens down
9. Vertex: (-2, -2); Axis: $x = -2$; y-int: (0, 6); x-ints: (-1, 0) and (-3, 0); opens up
10. Vertex: (2, 3); Axis: $x = 2$; y-int: (0, -9); x-ints: (1, 0) and (3, 0); opens down