Math 1 **8.4 Graphing Standard Form of a Quadratic**  Unit 8

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**Graph**

y = x2 – 2x – 3

**Standard Form:** y =

**Important Vocabulary**

**Y-Intercept:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**AOS Formula**

**X-Intercept (root, zero, solution):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Vertex:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Axis of Symmetry:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**“a” Value:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Vertex and Axis of Symmetry**

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| **Step 1:** Solve for the Axis of Symmetry using the AOS Formula  **Step 2:** Substitute AOS into the equation for x.  **Step 3:** Solve for y.  **Step 4:** Write the vertex as an ordered pair (x, y) |

**Example 1:** Find the vertex and the axis of symmetry for each function.

1. y = -2x2 + 4x – 9
2. y = x2 – 10
3. y = x2 + 4x – 1

**Graphing Standard Form**

**Example 2:** Sketch the graph of y = x2 – 1 a = \_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_



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| **x** | **y** |
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|  |  |

Opens: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

AOS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y-Int: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Example 3:** Sketch the graph of y = x2 – 1 a = \_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_



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| --- | --- |
| **x** | **y** |
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|  |  |
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|  |  |
|  |  |

Opens: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

AOS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y-Int: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_