

Test Topics Graphs and Quadratics:

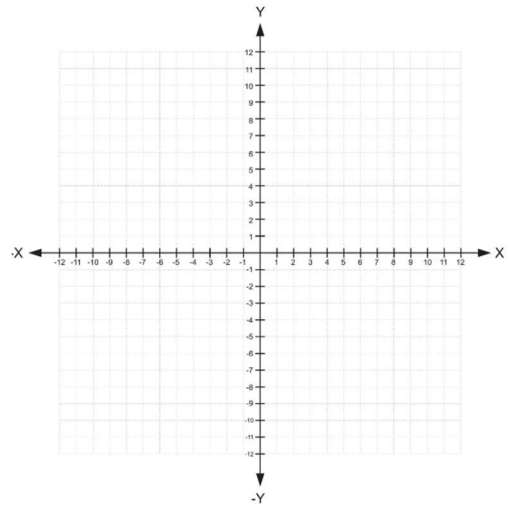
- Determine the vertex of a quadratic
 - From vertex form $y = a(x - h)^2 + k$ $((h, k))$
 - From standard form $y = ax^2 + bx + c$ $h = \frac{-b}{2a}$ and $k = f(\frac{-b}{2a})$
- Determine AOS, Domain/Range/Max/Min (ALL related to vertex)
- Convert from standard to vertex form – Completing the Square
- Convert from vertex to standard – FOIL
- Describe transformation from parent graphs (___ units UP/DOWN, ___ units RIGHT/LEFT, Flipped on the x – axis, narrower/wider, etc.)
- Quick Sketch of Quadratic Equation (Label Vertex, 5 points, AOS)
- Solving Quadratics (includes imaginary solutions):
 - Factor
 - Completing the Square/Square Root Property
 - Quadratic Formula
 - TI-84 (Method 1 and Method 2) – Likely word problem

REVIEW

1. Determine the Vertex: $f(x) = -3x^2 - 4x + 5$

2. Determine the Vertex: $f(x) = 4(x + 7)^2 - 2$

3. Given, $y = 2(x - 3)^2 + 1$. Determine: Vertex, Min/Max, Domain/Range, AOS, Graph.



4. Convert to vertex form: $y = x^2 + 12x - 13$

5. Convert to standard form: $y = -2(x + 1)^2 - 3$

6. Describe the transformation: $y = -2|x + 7| - 8$

7. Solve by Factoring: $3x^2 - 16x = -5$

8. Solve by Quadratic Formula: $2x^2 + 3x = -18$

9. Solve by Completing the Square: $x^2 - 6x - 7 = 0$

10. Solve by Square Root Property: $4x^2 + 1 = 0$

11. Mick throws a ball with an initial velocity of 40 feet per second. The equation for the height of the ball is $h = -16t^2 + 40t + 5$, where h represents the height in feet and t represents the time in seconds. When will the ball hit the ground?