

Algebra 2 Unit 3 Graphing Review

SHOW ALL WORK on a separate piece of paper

Without graphing, state if the graph opens up or down, domain, range, intercepts, end behavior, vertex, A.O.S., max/min value, and determine if it's a max or min

1. $y = -3x^2 + 12x - 8$

2. $y = 7 - 8x - 2x^2$

Graph each function. State the vertex, A.O.S., domain, range, intercepts, max/min value, and end behavior.

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

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

5. $y = -(x + 1)^2 - 2$

6. $y = 2(x + 2)(x + 4)$

7. $y = 3(x - 5)(x - 6)$

Graph each inequality

8. $y \leq 2x^2 + x + 3$

9. $y > (x + 3)^2 + 2$

10. A rock is thrown from the roof of a building that is 445 feet tall with a downward velocity of 2 ft/sec. How long after the rock is thrown is it 440 feet from the ground? How long until the rock hits the ground?
11. A football is released into the air at an initial height of 6 feet and an initial upward velocity of 30 feet per second. The football is caught at a height of 7 feet. How long is the football in the air? What is the football's maximum height?

12. You accidentally drop your phone while sitting on a wall that is 6 feet tall. Your friend sees you drop your phone and is able to catch your phone when it is 6 inches above the ground. How long are you scared that your phone will shatter?
13. You are building a frame of uniform width to border a mirror that measures 20 in by 24 in. You have 416 square inches of metal to use to make the frame. Write and solve an equation to find the borders width.

Write an equation for each quadratic with the given characteristics

14. Vertex at $(-1, -4)$ that passes through $(2, -1)$
15. x-intercepts at -6 and 3 that passes through $(0, -9)$
- 16.

