

Algebra II
Quadratics #4

Name _____

Find the equation of the parabola given:

1. has a vertex at $(-3, 11)$ and contains the point $(-1, 5)$
2. has a vertex at $(0, -4)$ and contains the point $(2, 6)$
3. Contains the points $(1, -2)$ $(0, 2)$ and $(2, -4)$ (Don't use your GC)

5. A man throws a ball off the top of a building and records the height of the ball at different times, as shown in the table.

Time (s)	Height (ft)
0	46
1	63
2	48
3	1

- a. Find a quadratic model for the data.
 - b. Use the model to estimate the height of the ball at 2.5 seconds.
 - c. What is the ball's maximum height?
6. On a suspension bridge, the roadway is hung from cables hanging between support towers (think George Washington Bridge). The cable of one bridge is in the shape of the parabola $f(x) = 0.1x^2 - 7x + 150$, where y is the height in feet of the cable above the roadway at the distance x feet from a support tower.
- a. What is the closest the cable comes to the roadway? (Hint: Which part of this parabola is the lowest point)
 - b. How far from the support tower does this occur?