

For each Quadratic do the following:

- Find the Equation for the LOS.
- Find the Coordinates of the Vertex.
- Find the y-intercept.
- Tell if the quadratic has a Max or a Min.

1. $y = -\frac{1}{2}x^2 + 10x - 19$

2. $y = 7(x + 2)^2 - 9$

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1. $y = -\frac{1}{2}x^2 + 10x - 19$

$x = \frac{-10}{-1} = 10$
 $(10, 31)$

-19

In Standard Form when you replace x with zero the constant is the only thing left.

Since a is negative the parabola opens down.

For each Quadratic do the following:

- Find the Equation for the LOS.

- Find the Coordinates of the Vertex.

- Find the y-intercept.

- Tell if the quadratic has a Max or a Min.

$x = -2$

$(-2, -9)$

Replace x with zero.

19

Since a is positive the parabola opens up.

2. $y = 7(x + 2)^2 - 9$

$(0+2)^2$
 $7 \cdot 4$
 $28 - 9$

2 Left

9 Down

An object is shot into the air from the top of a 30 foot building. The following equation models the height of the object as a function of time:

$h(t) = -16t^2 + 136t + 30$

- Find the maximum height of the object.
- Find the time it takes to get to the max height.
- Find the time it takes for the object to reach the ground.
- Find the time it takes the object to reach a height of 250 feet.

An object is shot into the air from the top of a 30 foot building. The following equation models the height of the object as a function of time:

$$h(t) = -16t^2 + 136t + 30$$

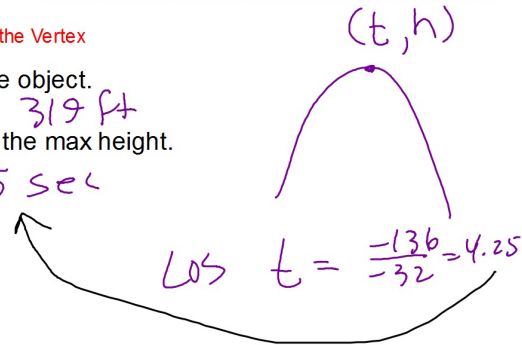
Round answers to the nearest hundredth

1. Find the maximum height of the object.

$$h(4.25) = 319 \text{ ft}$$

2. Find the time it takes to get to the max height.

$$4.25 \text{ sec}$$



$$h(t) = -16t^2 + 136t + 30$$

3. Find the time it takes for the object to reach the ground.

$$0 = -16t^2 + 136t + 30$$

$$b^2 - 4ac = 20416$$

$$\frac{-136 \pm \sqrt{20416}}{-32}$$

$$t = -0.22$$

$$8.72$$

$$h(t) = -16t^2 + 136t + 30$$

4. Find the time it takes the object to reach a height of 250 feet.

$$250 = -16t^2 + 136t + 30$$

$$0 = -16t^2 + 136t - 220$$

$$b^2 - 4ac = 4416$$

$$\frac{-136 \pm \sqrt{4416}}{-32}$$

$$t = 2.17, 6.33$$