

Unit 6 Review (A.CED.A - quadratic)

Name: _____
Period: _____ #: _____

Approaching

1) An object is catapulted off of a platform at an initial velocity of 100 feet per second. The platform is 20 feet high. Write a function for the height of the ball, $h(t)$ after t seconds.

1st) set up your equation

$$h(t) = \underline{\quad} t^2 + \underline{\quad} t + \underline{\quad}$$

must have $h(t) =$

2nd) Fill in the blanks

$$h(t) = \frac{-16}{-16} t^2 + \frac{100}{\text{always velocity}} t + \frac{20}{\text{always height}}$$

2) Use the given information to write a quadratic function, $f(x)$, in factored form.

a) The parabola opens downward and the x-intercepts are $(-7, 0)$ and $(3, 0)$.

1st) Set up your equation $f(x) = \underline{\hspace{1cm}}$
↑ lead coefficient must be negative

$$f(x) = -(x \underline{\hspace{1cm}})(x \underline{\hspace{1cm}})$$

must have $f(x) =$

Two points = two sets of $(x \underline{\hspace{1cm}})$
↑ always

2nd) Fill in the blanks $(-7, 0)$ $(3, 0)$

$$f(x) = -(x + \underline{7})(x - \underline{3})$$

b) The parabola opens upward and the x-intercepts are $(-6, 0)$ and $(8, 0)$.

↑ lead coefficient must be positive

$$1st) f(x) = (x \underline{\hspace{1cm}})(x \underline{\hspace{1cm}})$$

2nd) $(-6, 0)$ $(8, 0)$

$$f(x) = (x + \underline{6})(x - \underline{8})$$

Meeting

3) Use the given information to write a possible function $f(x)$ for the quadratic function:
The vertex is $(5, 3)$ and the parabola opens downward.

Lead coefficient must be
negative

1st) $f(x) = -(\underline{x})^2$

one point, one set of (x)

Since only one (x) , must
be $(x)^2$

2nd) $f(x) = -(\overset{x\ y}{\underset{(5, 3)}{x-5}})^2 + 3$

↑ change ↑ same