

## Bellwork:

Graph and describe:

$$y = -2x^2 - 10x - 5$$

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## Chapter 4.2: Graph Quadratic Functions in Vertex or Intercept Form

Vertex Form:

$$y = a(x - h) + k$$

Vertex : (h,k)

Axis of Sym.  $x=h$

Intercept Form:

$$y = a(x - p)(x - q)$$

x-int. are p and q

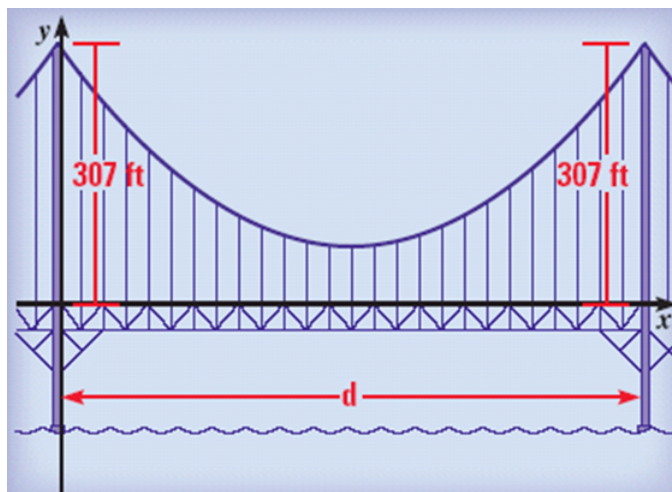
axis of sym.  $x = \frac{p+q}{2}$

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ex. Graph and explain  $f(x) = -\frac{1}{4}(x+2)^2 + 5$

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ex. The Tacoma Narrows Bridge in Washington has two towers that each rise 307 feet above the roadway and are connected by suspension cables as shown. Each cable can be modeled by the function  $y = \frac{1}{7000}(x-1400)^2 + 27$  where  $x$  and  $y$  are measured in feet. What is the distance  $d$  between the towers



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ex. Graph:  $y = 2(x + 3)(x - 1)$

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ex. The path of a placekicked football can be modeled by the function  $y = -0.026x(x - 46)$  where  $x$  is the horizontal distance(yds) and  $y$  is the corresponding height(yds). How far is the football kicked? What is the maximum height of the ball?

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ex. Write in standard form.  $y = -2(x + 5)(x - 8)$

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ex. Write in standard form

$$y = 4(x - 1)^2 + 9$$

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Homework: Ch 4.2 pg. 249  
#'s 4-40e, 51,52

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