

Minimum or Max?  
Value?

(2, 5)  
max  
value = 3

(-1, -4)  
min  
value = -4

(16, -2)  
min  
value = -2

Very small  
quiz

## 4.2 b Intercept Form

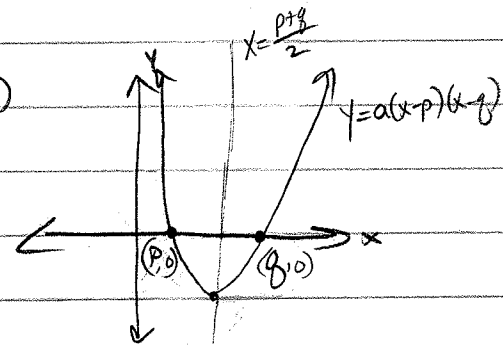
Standard:  $y = ax^2 + bx + c$

Vertex:  $y = a(x-h)^2 + k$

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

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

- X-intercepts at  $p$  &  $q$  (opposite of sign)
- axis of symmetry halfway between  $p$  &  $q$ , at  $x = \frac{p+q}{2}$
- opens up if  $a > 0$ , down if  $a < 0$



Graph in Intercept Form

$$y = 2(x+3)(x-1)$$

1<sup>st</sup> - Find the X-intercepts

$$p = -3 \quad q = 1$$

$$(-3, 0) \quad (1, 0)$$

2<sup>nd</sup> - Find symmetry line

$$x = \frac{p+q}{2} = \frac{-3+1}{2}$$

$$x = -1$$

3<sup>rd</sup> - Find  $y$ , using  $x$  from 2<sup>nd</sup> step

$$y = 2(-1+3)(-1-1)$$

$$= 2(2)(-2)$$

$$= -8 \quad y = -8 \rightarrow (-1, -8)$$

4<sup>th</sup> - Plot & Connect

