Use this factored form of a quadratic.

$y = (x - 3)(x + 5)$

1. Find the x-intercepts.
   $x = 3, -5$

2. Find the LOS
   $x = \dfrac{3 + -5}{2} = \dfrac{-2}{2} = -1$

3. Find the Vertex
   $(-1, -16) \rightarrow (-1-3)(-1+5)$

4. What is the y-intercept?
   $(0-3)(0+5) = -15$

$y = (x-3)(x+5)$
$y = x^2 + 2x - 15$
$LOS \quad -b/2a = \dfrac{-2}{2} = -1$
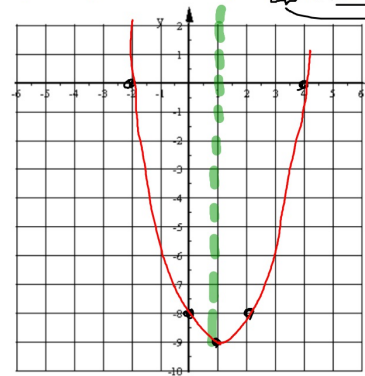$Vertex \ (-1, -16)$
$y\text{-int} = c = -15$

Intercept Form (Factored Form)

$Y = (x-m)(x+n)$

1. Find x-intercepts first: $0 = (x - m)(x + n)$
   zeros of each factor

2. Find LOS: x = average of the x-int

3. Find the Vertex (LOS,   ) replace x with LOS and find y

4. Find y-int: Replace x with zero. = product of the constants in each factor

---

	x-intercepts	Eq for LOS:	y-intercept
1. $y = (x+7)(x-1)$	$-7, 1$	$x = \dfrac{-7+1}{2} = \dfrac{-6}{2}$ $x = -3$	$(7)(-1) = -7$
2. $y = (5x+3)(x-8)$	$\dfrac{-3}{5}, 8$	$x = \dfrac{37}{10}$	$(3)(-8) = -24$
3. $y = (2x-7)(4x+9)$	$\dfrac{7}{2}, \dfrac{-9}{4}$	$x = \dfrac{5}{8}$	$(-7)(9) = -63$
4. $y = 3x(x+10)$	$0, -10$	$x = -5$	$(0)(10) = 0$

Graph this parabola: $y = (x-4)(x+2)$

$x\text{-int} \ 4, -2$

$LOS: \ x = \dfrac{4 + -2}{2} = 1$

$Vertex: (1, -9)$ $(1-4)(1+2)$

$y\text{-int} = (0-4)(0+2)$
$= (-4)(2)$
$= -8$