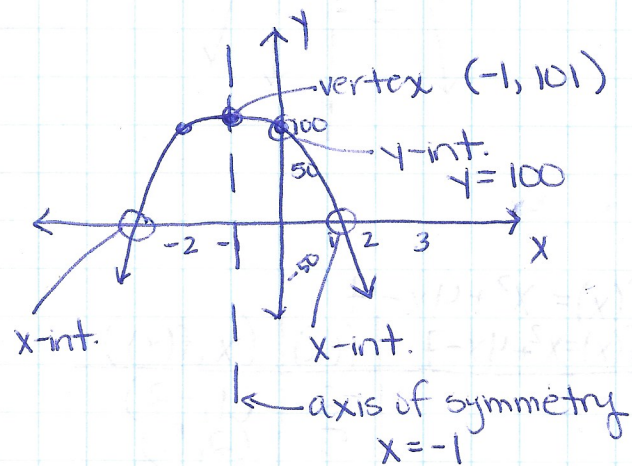


① $f(x) = 100 - 2x - x^2$
 $f(x) = -x^2 - 2x + 100$
 $a = -1$ $b = -2$ $c = 100$

① y-int: $y = 100$ $(0, 100)$
 ② vertex
 $x = \frac{-b}{2a} = \frac{-(-2)}{2(-1)} = -1$

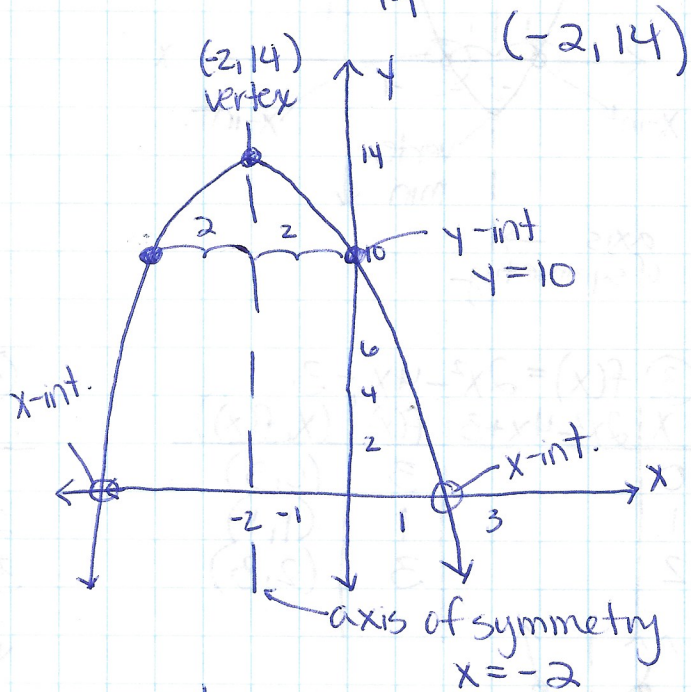
$f(-1) = -(-1)^2 - 2(-1) + 100$
 $= -1 + 2 + 100$
 $= 101$
 $(-1, 101)$



② $f(x) = -x^2 - 4x + 10$
 $a = -1$ $b = -4$ $c = 10$

① y-int: $y = 10$ $(0, 10)$
 ② vertex
 $x = \frac{-b}{2a} = \frac{-(-4)}{2(-1)} = -2$

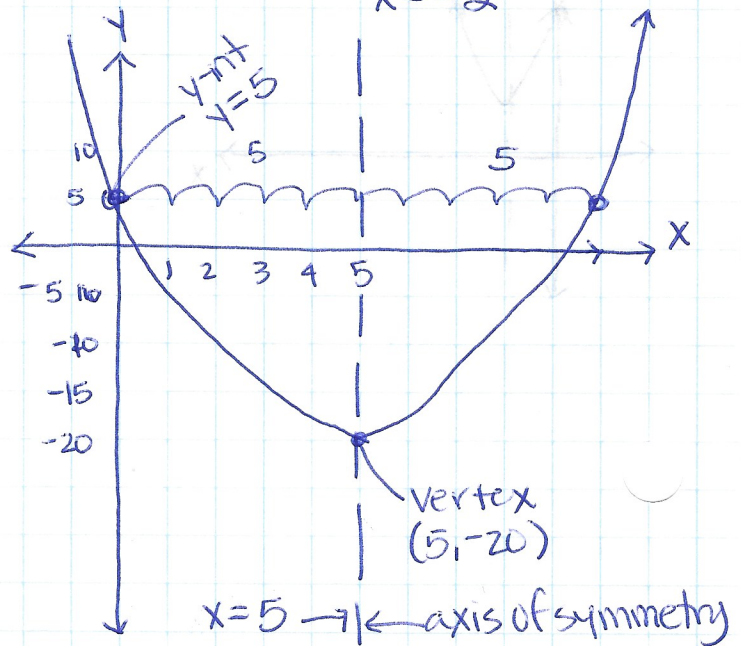
$f(-2) = -(-2)^2 - 4(-2) + 10$
 $= -4 + 8 + 10$
 $= 4 + 10$
 $= 14$
 $(-2, 14)$



③ $f(x) = x^2 - 10x + 5$
 $a = 1$ $b = -10$ $c = 5$

① y-int: $y = 5$ $(0, 5)$
 ② vertex
 $x = \frac{-b}{2a} = \frac{-(-10)}{2(1)} = 5$

$f(5) = 5^2 - 10(5) + 5$
 $= 25 - 50 + 5$
 $= -20$
 $(5, -20)$



LT 3.2 Study Guide

④ $f(x) = 20 + 6x - x^2$
 $f(x) = -x^2 + 6x + 20$
 $a = -1$ $b = 6$ $c = 20$

- ① y-int: $y = 20$
- ② vertex

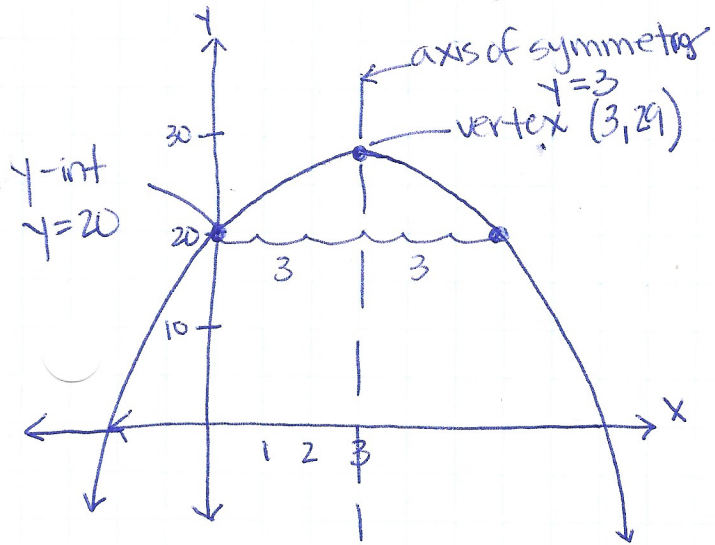
$$x = \frac{-b}{2a} = \frac{-6}{2(-1)} = 3$$

$$f(3) = -(3)^2 + 6(3) + 20$$

$$= -9 + 18 + 20$$

$$= 29$$

$(3, 29)$



⑤ $f(x) = -6x^2 + 12x + 21$
 $a = -6$ $b = 12$ $c = 21$

- ① y-int: $y = 21$
- ② vertex

$$x = \frac{-b}{2a} = \frac{-12}{2(-6)} = 1$$

$$f(1) = -6(1)^2 + 12(1) + 21$$

$$= -6 + 12 + 21$$

$$= 27$$

$(1, 27)$

