

Name: key

UNIT 8 DAY 5 - HOMEWORK

GRAPHING QUADRATICS (STANDARD FORM)

(#1-3) Identify the axis of symmetry, vertex and y-intercept of the following:

1.  $y = x^2 - 16x + 8$

$\frac{16}{2} = 8$

$y = (8)^2 - 16(8) + 8 = -64$   
vertex  $(8, -64)$  y-int  $(0, 8)$   
A.O.S.  $x = 8$

2.  $y = -3x^2 + 12x - 1$

$\frac{-12}{2(-3)} = \frac{-12}{-6} = 2$

$y = -3(2)^2 + 12(2) - 1 = 11$   
vertex  $(2, 11)$   
A.O.S.  $x = 2$  y-int  $(0, -1)$

3.  $y = -2(x+3)^2 - 7$

vertex  $(-3, -7)$  y-int  $(0, -25)$

A.O.S.  $x = -3$

$-2(x+3)(x+3) - 7$

$-2(x^2 + 6x + 9) - 7$

$-2x^2 - 12x - 18 - 7$

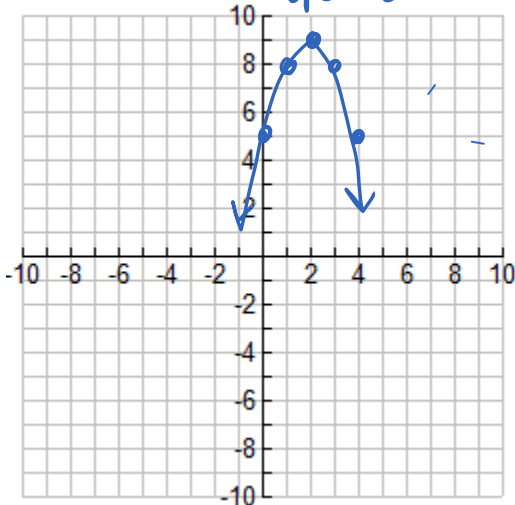
$-2x^2 - 12x - 25$

(#4-7) Graph the following quadratic equations and state the vertex, axis of symmetry and y-intercept of each.

4.  $y = -x^2 + 4x + 5$

$\frac{-4}{2(-1)} = 2$

vertex:  $(2, 9)$   
A.O.S.  $x = 2$   
y-int:  $(0, 5)$   
opens: down



5.  $y = 2x^2 + 8x + 2$

$\frac{-8}{2(2)} = -2$

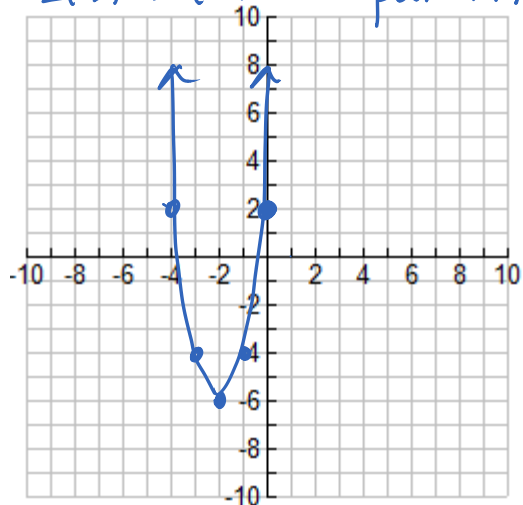
$2(-2)^2 + 8(-2) + 2 = -6$

vertex  $(-2, -6)$

A.O.S.  $x = -2$

y-int  $(0, 2)$

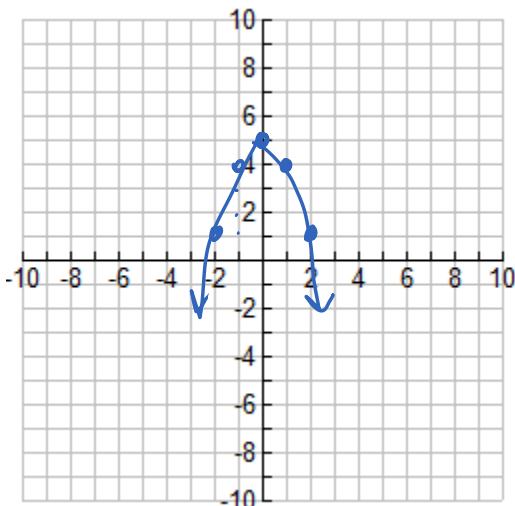
pattern: 2, 6, 10



6.  $y = -x^2 + 5$

$\frac{0}{2} = 0$

vertex  $(0, 5)$   
A.O.S.  $x = 0$   
y-int  $(0, 5)$



7.  $y = 3x^2 - 6x - 1$

$\frac{6}{2(3)} = 1$

vertex  $(1, -4)$

A.O.S.  $x = 1$

y-int  $(0, -1)$

Pattern: 3, 9, 15

