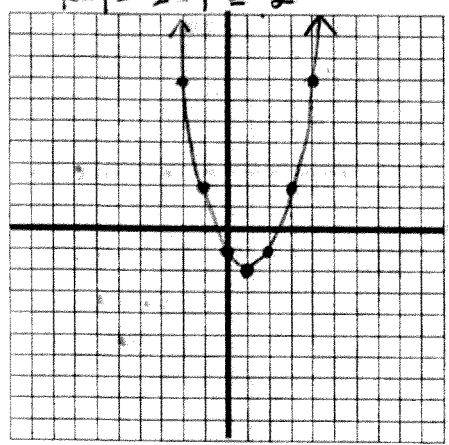


Day 5

5.2 Graphing Quadratic Functions Homework

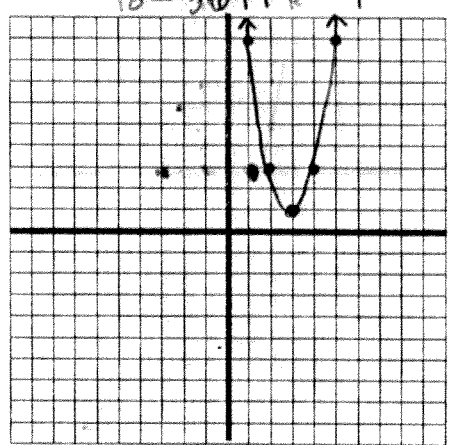
Name Key
Date _____ Block _____

1. $y = x^2 - 2x - 1$ $x = h = \frac{-b}{2a} = \frac{-(-2)}{2(1)} = 1$
 $k = 1^2 - 2(1) - 1 = -2$
 $k = | -2 | = -2$



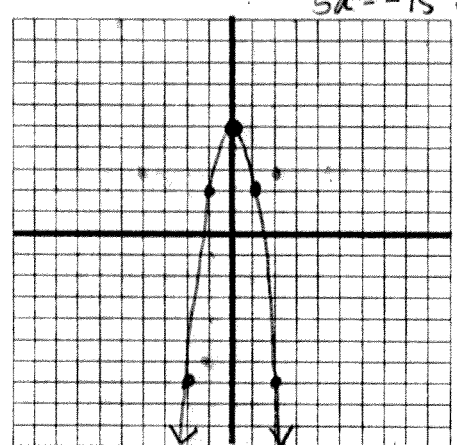
Vertex: $(1, -2)$
 Domain: $(-\infty, \infty)$
 Range: $[-2, \infty)$
 Axis of Symmetry: $x = 1$
 Zeros: $-0.414, 2.414$

2. $y = 2x^2 - 12x + 19$ $h = \frac{-(-12)}{2(2)} = 3$ S or V
 $k = 2(3)^2 - 12(3) + 19 = 1$
 $18 - 36 + 19 = 1$



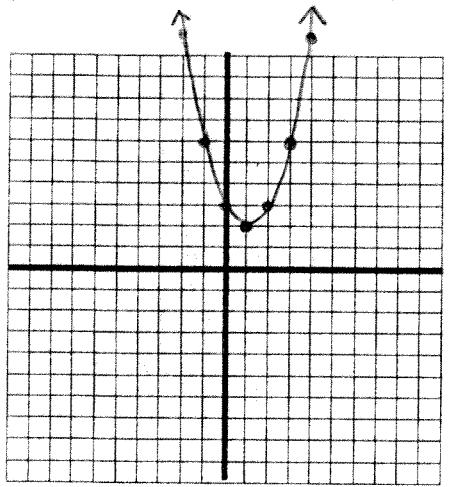
Vertex: $(3, 1)$
 Domain: $(-\infty, \infty)$
 Range: $[1, \infty)$
 Axis of Symmetry: $x = 3$
 Zeros: no real roots

3. $y = -3x^2 + 5$
 $a = -3$
 $1a = -3$
 $3a = -9$
 $5a = -15$ etc



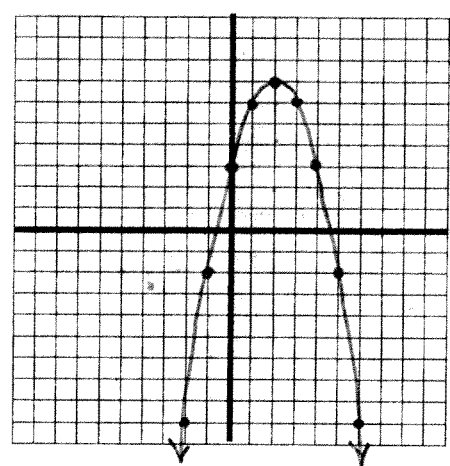
Vertex: $(0, 5)$
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, 5]$
 Axis of Symmetry: $x = 0$
 Zeros: $-1.290, 1.290$

4. $y = (x - 1)^2 + 2$
 ✓



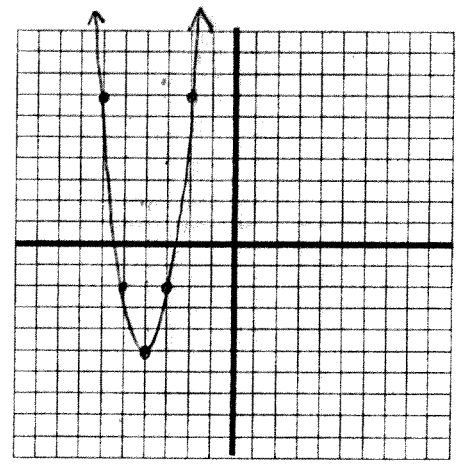
Vertex: $(1, 2)$
 Domain: $(-\infty, \infty)$
 Range: $[2, \infty)$
 Axis of Symmetry: $x = 1$
 Zeros: no real roots

5. $y = -(x - 2)^2 + 7$
 ✓



Vertex: $(2, 7)$
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, 7]$
 Axis of Symmetry: $x = 2$
 Zeros: $-0.414, 4.414$

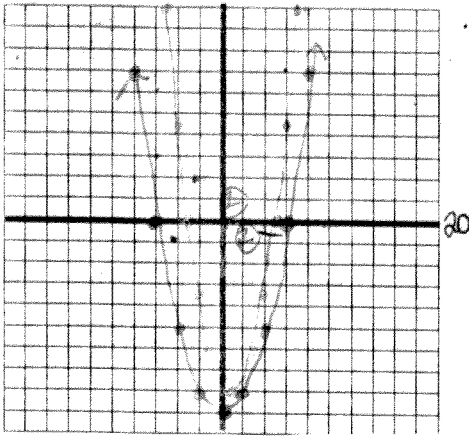
6. $y = 3(x + 4)^2 - 5$
 ✓



Vertex: $(-4, -5)$
 Domain: $(-\infty, \infty)$
 Range: $[-5, \infty)$
 Axis of Symmetry: $x = -4$
 Zeros: $-4.414, -3.586$

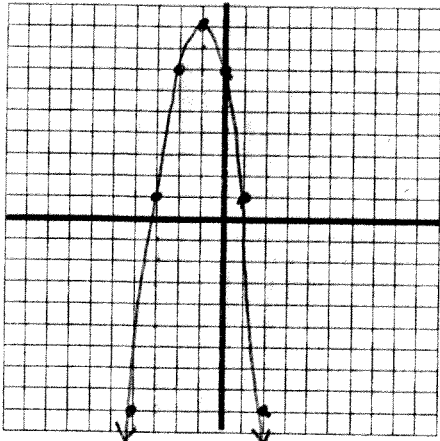
7.

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



Vertex: $(0, -9)$
 Domain: $(-\infty, \infty)$
 Range: $[-9, \infty)$
 Axis of Symmetry: $x=0$
 zeros: -3 and 3

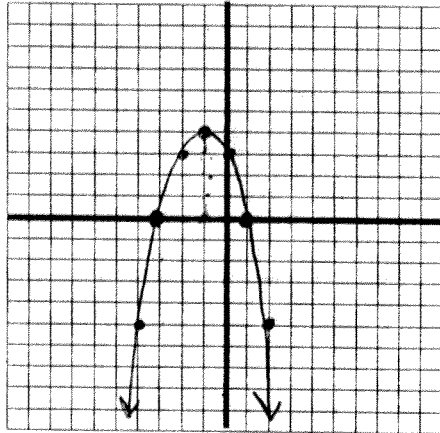
10. $y = -2x^2 - 4x + 7$



$x = h = \frac{-(-4)}{2(-2)} = \frac{4}{-4} = -1$
 $y = k = -2(-1)^2 - 4(-1) + 7 = -2 + 4 + 7 = 9$
 Vertex: $(-1, 9)$
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, 9]$
 Axis of Symmetry: $x = -1$
 zeros: -2 and 1

8. $y = -(x-1)(x+3)$

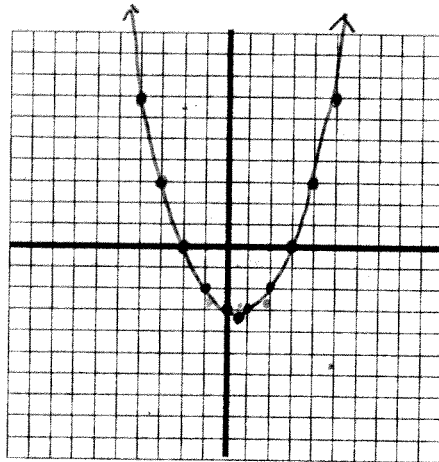
I $y = a(x-p)(x-q)$



$h = -1$ $k = -(-1-1)(-1+3) = -(-2)(2) = 4$

Vertex: $(-1, 4)$
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, 4]$
 Axis of Symmetry: $x = -1$
 zeros: -3 and 1

11. $y = \frac{1}{2}(x-3)(x+2)$

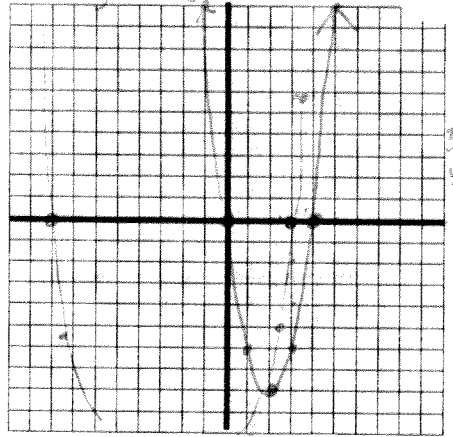


$h = \frac{3-2}{2} = \frac{1}{2}$
 $k = \frac{1}{2}(\frac{1}{2}-3)(\frac{1}{2}+2) = \frac{1}{2}(-\frac{5}{2})(\frac{5}{2}) = -\frac{25}{8}$
 Vertex: $(\frac{1}{2}, -3\frac{1}{8})$
 Domain: $(-\infty, \infty)$
 Range: $[-3\frac{1}{8}, \infty)$
 Axis of Symmetry: $x = \frac{1}{2}$
 zeros: -2 and 3

9.

$y = -2x(x-4)$

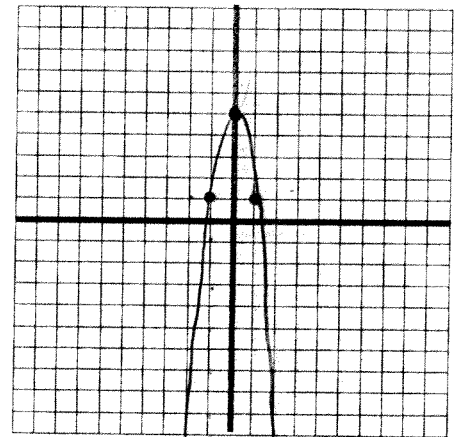
I $y = a(x-p)(x-q)$
 $y = -2(2)(2-4)$
 $y = -2 \cdot 2 \cdot -2 = 8$



$x = h = 2 = \frac{0+4}{2}$
 $y = k = -2(2)(2-4) = 8$
 Vertex: $(2, 8)$
 Domain: $(-\infty, \infty)$
 Range: $[-8, \infty)$
 Axis of Symmetry: $x = 2$
 zeros: $0, 4$

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

S or V



Vertex: $(0, 5)$
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, 5]$
 Axis of Symmetry: $x = 0$
 zeros: $-\frac{1}{2}$ and $\frac{1}{2}$