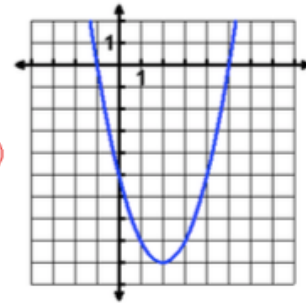


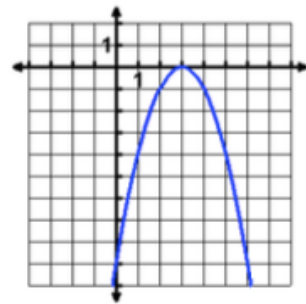
Characteristics of Quadratic Functions Practice Worksheet A

Name Keyz Date _____

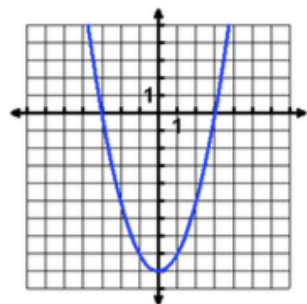
1. Domain: $\mathbb{R} (-\infty, \infty)$ Range: $y \geq -9 [-9, \infty)$
 Vertex: $(2, -9)$ AOS: $x = 2$
 Increasing: $x > 2 (2, \infty)$ Decreasing: $x < 2 (-\infty, 2)$
 End Behavior: $x \rightarrow \infty, f(x) \rightarrow +\infty$
 $x \rightarrow -\infty, f(x) \rightarrow +\infty$



2. Domain: $\mathbb{R} (-\infty, \infty)$ Range: $y \leq 0 (-\infty, 0]$
 Vertex: $(3, 0)$ AOS: $x = 3$
 Increasing: $x < 3 (-\infty, 3)$ Decreasing: $x > 3 (3, \infty)$
 End Behavior: $x \rightarrow \infty, f(x) \rightarrow -\infty$
 $x \rightarrow -\infty, f(x) \rightarrow -\infty$



3. Domain: $\mathbb{R} (-\infty, \infty)$ Range: $y \geq -9 [-9, \infty)$
 Vertex: $(0, -9)$ AOS: $x = 0$
 Increasing: $x > 0 (0, \infty)$ Decreasing: $x < 0 (-\infty, 0)$
 End Behavior: $x \rightarrow \infty, f(x) \rightarrow +\infty$
 $x \rightarrow -\infty, f(x) \rightarrow +\infty$



Graph the quadratic function and write the characteristics.

4. $f(x) = 2(x - 3)^2 - 4$

Domain $\mathbb{R} (-\infty, \infty)$

Range $y > -4 [-4, \infty)$

Vertex $(3, -4)$

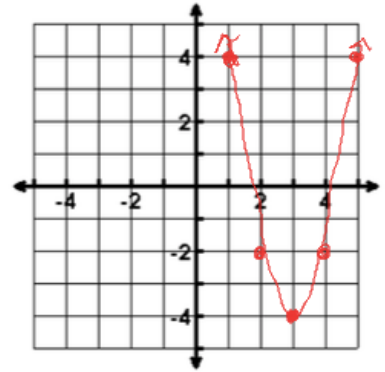
AOS $x = 3$

Increasing $x > 3 (3, \infty)$

Decreasing $x < 3 (-\infty, 3)$

End Behavior: $x \rightarrow \infty, f(x) \rightarrow +\infty$

$x \rightarrow -\infty, f(x) \rightarrow +\infty$



or $-\frac{b}{2a}$

5. $f(x) = x^2 - 4x + 3$

Domain $\mathbb{R} (-\infty, \infty)$

Range $y \geq -1 [-1, \infty)$

Vertex $(2, -1)$

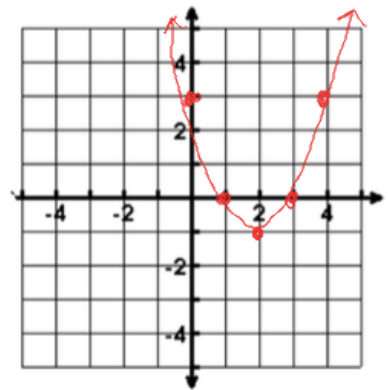
AOS $x = 2$

Increasing $x > 2 (2, \infty)$

Decreasing $x < 2 (-\infty, 2)$

End Behavior: $x \rightarrow \infty, f(x) \rightarrow +\infty$

$x \rightarrow -\infty, f(x) \rightarrow +\infty$



6. $f(x) = -0.5(x + 4)(x - 2)$

Domain $\mathbb{R} (-\infty, \infty)$

Range $y \leq 4.5 (-\infty, 4.5]$

Vertex $(-1, 4.5)$

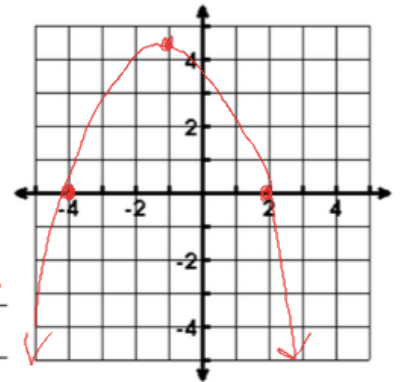
AOS $x = -1$

Increasing $x < -1 (-\infty, -1)$

Decreasing $x > -1 (-1, \infty)$

End Behavior: $x \rightarrow \infty, f(x) \rightarrow -\infty$

$x \rightarrow -\infty, f(x) \rightarrow -\infty$



use x-int to find x



$x = -1$

$y = -0.5(-1+4)(-1-2)$

$y = -0.5(3)(-3)$

$y = -0.5(-9) = 4.5$

Convert to Standard Form

or $f(x) = -0.5(x^2 + 2x - 8)$

$-0.5x^2 - x + 4$

$x = -\frac{b}{2a}$