Geometry **Graphing Quadratics in Standard Form WS #2**

5. $y = x^2 - 4x - 5$ Form: _____

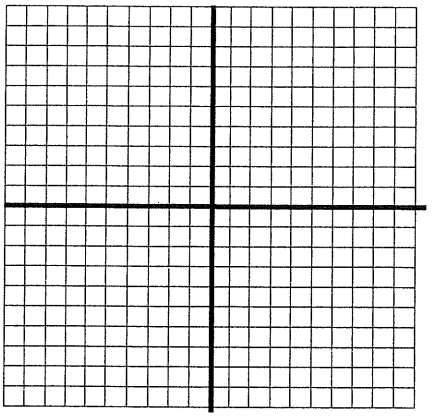
Vertex: _____ a = _____ Max / Min (Circle one)

Opens: _____ AOS: _____

x – intercept(s): _____ y – intercept: _____

Domain: _____ Range: _____

Avg. Rate of Change[4, 6]: _____



End Behavior: As $x \to \infty, f(x) \to$ _____ Increasing: _____ Positive: _____

As $x \to -\infty, f(x) \to$ _____ Decreasing: _____ Negative: _____

6. $y = -3x^2 + 6x + 4$ Form: _____

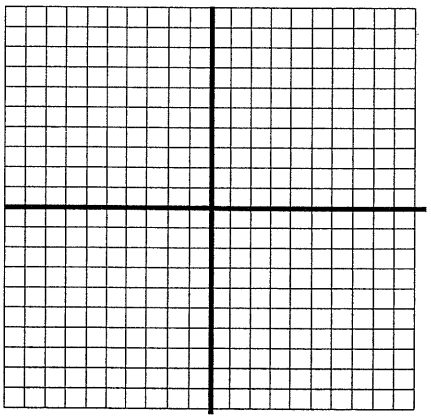
Vertex: _____ a = _____ Max / Min (Circle one)

Opens: _____ AOS: _____

x – intercept(s): _____ y – intercept: _____

Domain: _____ Range: _____

Avg. Rate of Change[4, 6]: _____

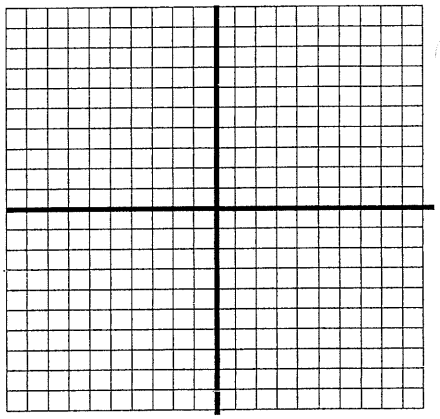


End Behavior: As $x \to \infty, f(x) \to$ _____ Increasing: _____ Positive: _____

As $x \to -\infty, f(x) \to$ _____ Decreasing: _____ Negative: _____

Geometry **Graphing Quadratics in Standard Form WS #2**

7. $y = -\frac{1}{2}x^2 - 2x - 5$ Form: _____



Vertex: _____ a = _____ Max / Min (Circle one)

Opens: _____ AOS: _____

x – intercept(s): _____ y – intercept: _____

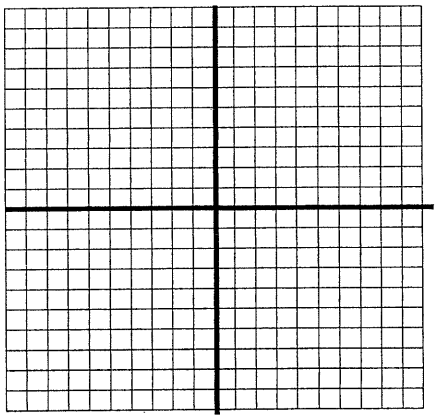
Domain: _____ Range: _____

Avg. Rate of Change[-4, -2]: _____

End Behavior: As $x \to \infty, f(x) \to$ _____ Increasing: _____ Positive: _____

As $x \to -\infty, f(x) \to$ _____ Decreasing: _____ Negative: _____

8. $y = -x^2 - 4x - 12$ Form: _____



Vertex: _____ a = _____ Max / Min (Circle one)

Opens: _____ AOS: _____

x – intercept(s): _____ y – intercept: _____

Domain: _____ Range: _____

Avg. Rate of Change[-4, -2]: _____

End Behavior: As $x \to \infty, f(x) \to$ _____ Increasing: _____ Positive: _____

As $x \to -\infty, f(x) \to$ _____ Decreasing: _____ Negative: _____

Geometry **Graphing Quadratics in Standard Form WS #2** Key

$x = \frac{-b}{2a} = \frac{4}{2} = 2$

5. $y = x^2 - 4x - 5$ Form: Standard

Vertex: (2, -9) a = 1 Max / Min (Circle one)

Opens: up AOS: $x = 2$

x – intercept(s): (-1, 0) (5, 0) y – intercept: (0, -5)

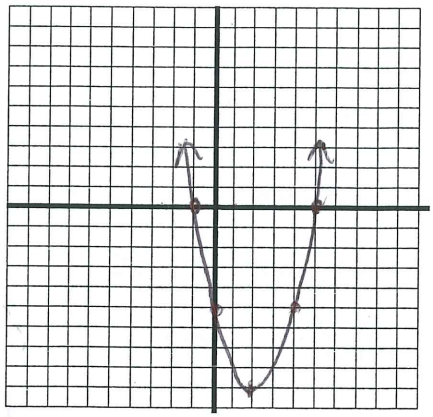
Domain: $(-\infty, \infty)$ Range: $[-9, \infty)$

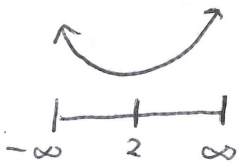
Avg. Rate of Change[4, 6]: _____

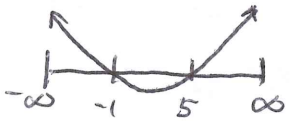
(4, -5)

(6, -)

x	y
4	-5
3	-8
2	-9
1	-8
0	-5







End Behavior: As $x \to \infty, f(x) \to$ +∞ Increasing: (2, ∞) (vertex) Positive: (-∞, -1) ∪ (5, ∞) (x-ints)

As $x \to -\infty, f(x) \to$ +∞ Decreasing: (-∞, 2) Negative: (1, 5)

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

6. $y = -3x^2 + 6x + 4$ Form: Standard

Vertex: (1, 7) a = -3 Max / Min (Circle one)

Opens: down AOS: $x = 1$

x – intercept(s): _____ y – intercept: (0, 4)

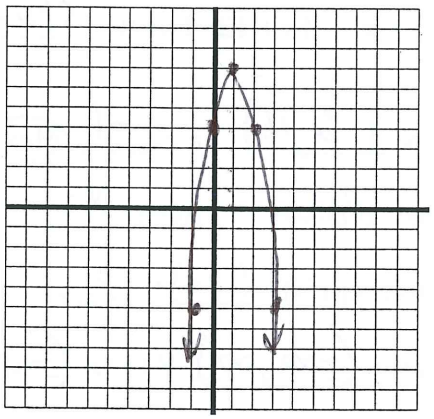
Domain: $(-\infty, \infty)$ Range: $(-\infty, 7]$

Avg. Rate of Change[4, 6]: _____

(4, -)

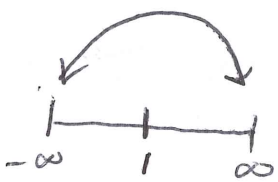
(6, -)

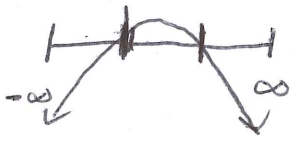
x	y
-1	-5
0	4
1	7
2	4
3	-5



End Behavior: As $x \to \infty, f(x) \to$ -∞ Increasing: (-∞, 1) (vertex) Positive: _____ (x-ints)

As $x \to -\infty, f(x) \to$ -∞ Decreasing: (1, ∞) Negative: _____





Geometry **Graphing Quadratics in Standard Form WS #2** $x = \frac{-b}{2a} = \frac{2}{2(-\frac{1}{2})} = \frac{2}{-1} = -2$

7. $y = -\frac{1}{2}x^2 - 2x - 5$ Form: Standard

Vertex: $(-2, -3)$ a = $-\frac{1}{2}$ (Max) / Min (Circle one)

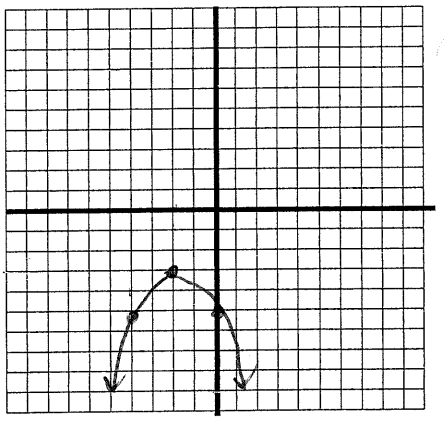
Opens: down AOS: $x = -2$

x – intercept(s): none y – intercept: $(0, -5)$

Domain: $(-\infty, \infty)$ Range: $(-\infty, -3]$

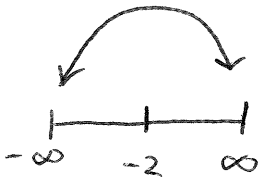
Avg. Rate of Change[-4, -2]: 1

x	y
-4	-5
-3	-3.5
-2	-3
-1	-3.5
0	-5



$(-4, -5)$ (x_1, y_1) $\frac{-3-(-5)}{-2-(-4)} = \frac{2}{2} = 1$

$(-2, -3)$ (x_2, y_2)



End Behavior: As $x \to \infty, f(x) \to$ $-\infty$ Increasing: $(-\infty, -2)$ Positive: none

As $x \to -\infty, f(x) \to$ $-\infty$ Decreasing: $(-2, \infty)$ Negative: $(-\infty, \infty)$

8. $y = -x^2 - 4x + 12$ Form: Standard

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

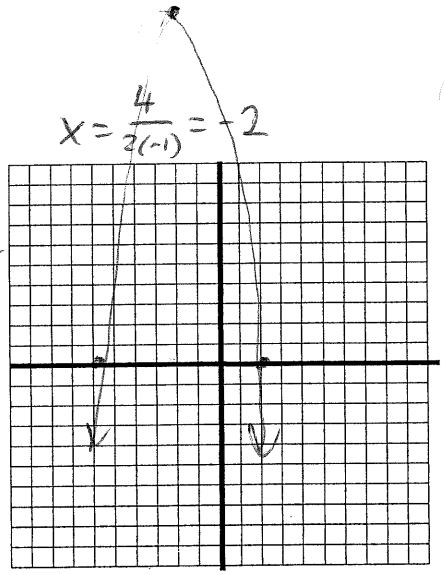
Vertex: $(-2, 16)$ a = -1 (Max) / Min (Circle one)

Opens: down AOS: $x = -2$

x – intercept(s): $(2, 0)$ $(-6, 0)$ y – intercept: $(0, 12)$

Domain: $(-\infty, \infty)$ Range: $(-\infty, 16]$

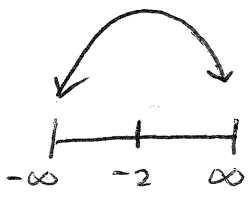
x	y
-4	12
-3	15
-2	16
-1	15
0	12

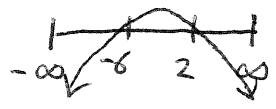


Avg. Rate of Change[-4, -2]: 2

$(-4, 12)$ (x_1, y_1) $\frac{16-12}{-2-(-4)} = \frac{4}{2} = 2$

$(-2, 16)$ (x_2, y_2)





End Behavior: As $x \to \infty, f(x) \to$ $-\infty$ Increasing: $(-\infty, -2)$ (vertex) Positive: $(-6, 2)$ (x-ints)

As $x \to -\infty, f(x) \to$ $-\infty$ Decreasing: $(-2, \infty)$ Negative: $(-\infty, -6) \cup (2, \infty)$