Math 2

Graphing Quadratics

Name _____

Date _____ Per ___

Graph each quadratic. Make sure to label all key components.

1. $f(x) = (x-3)(x+5)$

Maximum or Minimum

Vertex _____

AOS _____

x – intercepts (3,0) (-5,0)

$\frac{3+(-5)}{2}$

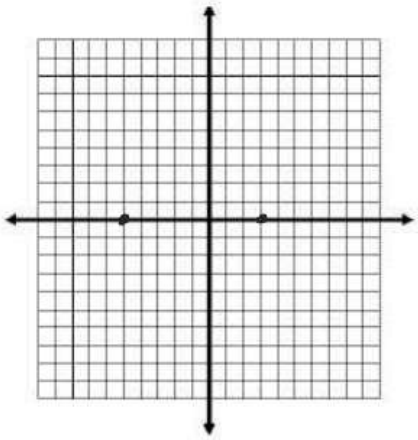
y – intercept _____

Domain _____

Range _____

Intervals of Increasing

Intervals of Decreasing



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

Maximum or Minimum

Vertex _____

AOS _____

x – intercepts _____

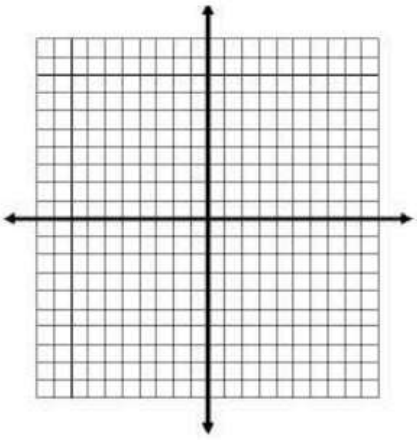
y – intercept _____

Domain _____

Range _____

Intervals of Increasing

Intervals of Decreasing

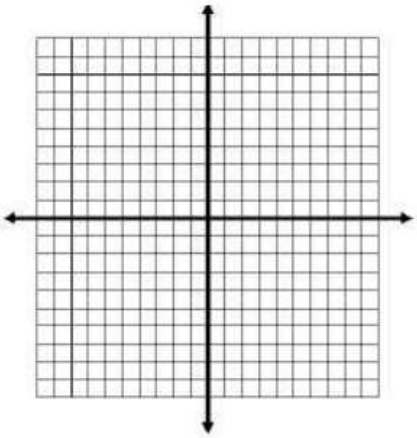


3. $f(x) = -(x+2)^2 + 3$

Maximum or Minimum
Vertex _____
AOS _____
x – intercepts _____

y – intercept _____
Domain_____
Range _____
Intervals of Increasing

Intervals of Decreasing

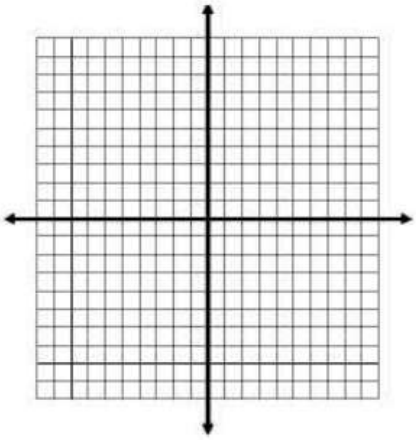


4. $f(x) = -2(x-2)(x-2)$

Maximum or Minimum
Vertex _____
AOS _____
x – intercepts _____

y – intercept _____
Domain_____
Range _____
Intervals of Increasing

Intervals of Decreasing



Math 2

Name _____

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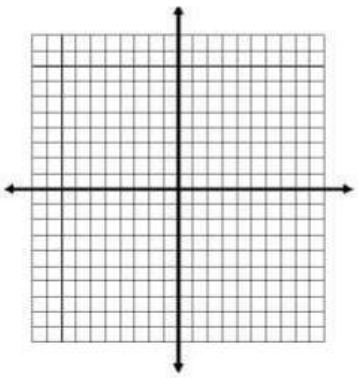
Graph each quadratic. Make sure to label all key components.

5. $f(x) = -3x^2 + 6x - 4$

Maximum or Minimum
Vertex _____
AOS _____
x – intercepts _____

y – intercept _____
Domain _____
Range _____
Intervals of Increasing

Intervals of Decreasing



6. $f(x) = (2x + 1)(2x - 3)$

Maximum or Minimum
Vertex $(\frac{1}{2}, -4)$
AOS $x = \frac{1}{2}$
x – intercepts $(-\frac{1}{2}, 0)$ $(\frac{3}{2}, 0)$

y – intercept $(0, -3)$
Domain $(-\infty, \infty)$
Range $[-4, \infty)$
Intervals of Increasing
$(\frac{1}{2}, \infty)$
Intervals of Decreasing
$(-\infty, \frac{1}{2})$

$2x+1=0$ $\quad 2x-3=0$

$2x=-1$ $\quad 2x=3$

$x=-\frac{1}{2}$ $\quad x=\frac{3}{2}$

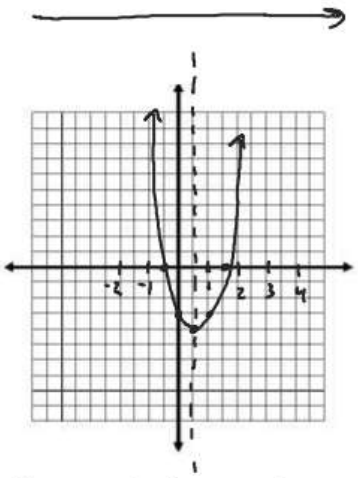
$\frac{-\frac{1}{2}+\frac{3}{2}}{2} = \frac{1}{2}$

$\left(2(\frac{1}{2})+1\right)\left(2(\frac{1}{2})-3\right)$

$(1+1)(1-3)$

$(2)(-2)$

-4



$(2(0)+1)(2(0)-3)$

$(1)(-3)$

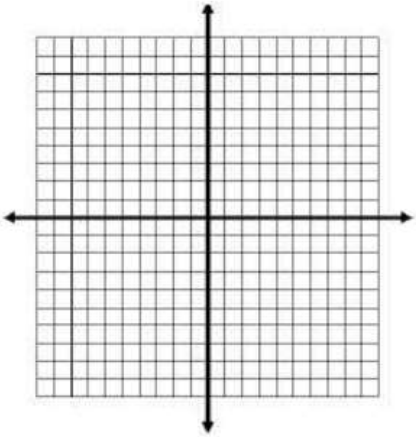
-3

7. $f(x) = 2(x-1)^2 - 5$

Maximum or Minimum
Vertex (1,-5)
AOS _____
x – intercepts _____

y – intercept _____
Domain_____
Range _____
Intervals of Increasing

Intervals of Decreasing

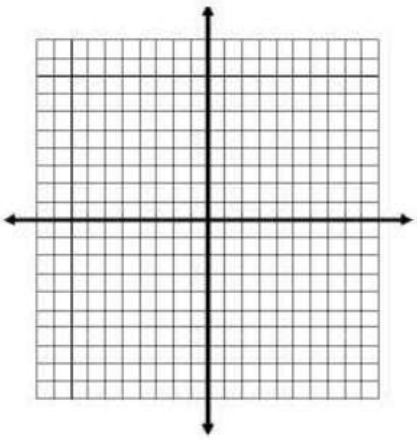


8. $f(x) = x^2 + 6x + 9$

Maximum or Minimum
Vertex _____
AOS _____
x – intercepts _____

y – intercept _____
Domain_____
Range _____
Intervals of Increasing

Intervals of Decreasing



Math 2 Name _____

Graphing Quadratics Date _____ Per ___

Graph each quadratic. Make sure to label all key components.

9. $f(x) = -2(x-2)(x+4)$

Maximum or Minimum
Vertex (-1, 18)
AOS X = -1
x – intercepts (2,0) (-4,0)

y – intercept (0, 16)
Domain (-∞, ∞)
Range (-∞, 18]
Intervals of Increasing
(-∞, -1)
Intervals of Decreasing (-1, ∞)

$X-2=0 \quad X+4=0$

$X=2 \quad X=-4$

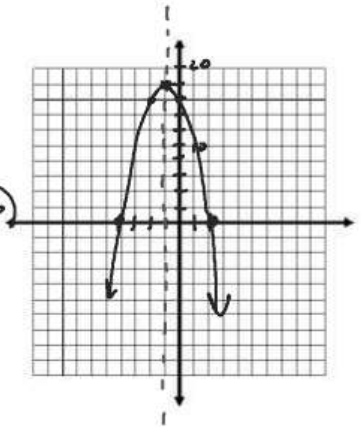
$\frac{2+(-4)}{2} = -1$

$-2(-1-2)(-1+4)$

$-2(-3)(3) = 18$

$-2(0-2)(0+4)$

$-2(-2)(4) = 16$



10. $f(x) = x^2 - 9$

x^2+0x-9

Maximum or Minimum
Vertex (0, -9)
AOS X = 0
x – intercepts (-3,0) (3,0)

y – intercept (0, -9)
Domain (-∞, ∞)
Range [-9, ∞)
Intervals of Increasing
(0, ∞)
Intervals of Decreasing
(-∞, 0)

$X = -\frac{b}{2a} = \frac{0}{2(1)} = 0$

$f(0) = (0)^2 - 9$

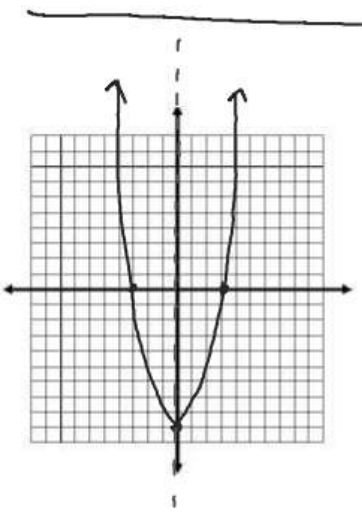
$= -9$

$0 = x^2 - 9$

$(x+3)(x-3) = 0$

$x+3=0 \quad x-3=0$

$x=-3 \quad x=3$

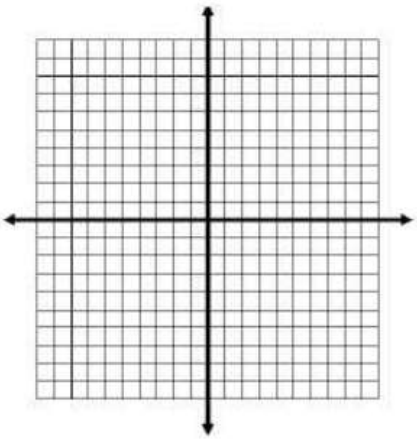


11. $f(x) = \frac{1}{4}(x-4)^2 - 8$

Maximum or Minimum
Vertex _____
AOS _____
x – intercepts _____

y – intercept _____
Domain_____
Range _____
Intervals of Increasing

Intervals of Decreasing



12. $f(x) = \frac{1}{4}(x+4)^2$

Maximum or Minimum
Vertex _____
AOS _____
x – intercepts _____

y – intercept _____
Domain_____
Range _____
Intervals of Increasing

Intervals of Decreasing