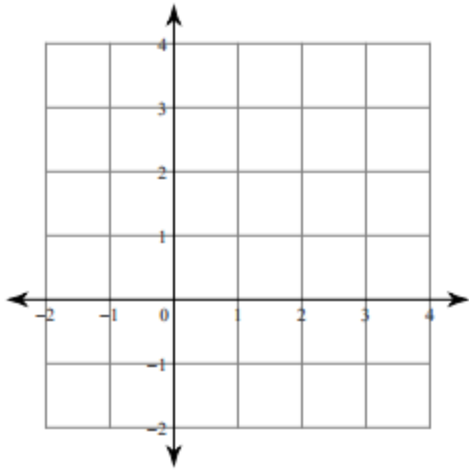


Graphing Quadratic Functions

Sketch the graph of each function. Pot at least 5 points each

a) $f(x) = x^2 - 2x$



AoS:

Vertex:

Opens:

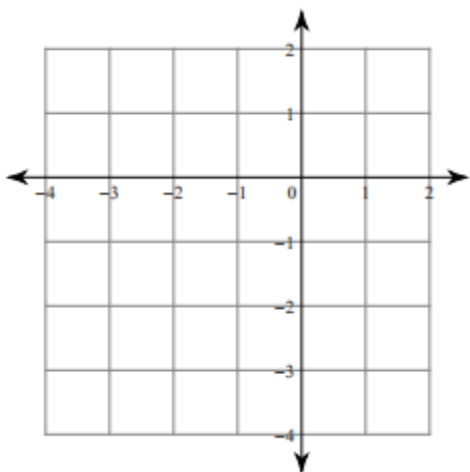
Min or Max:

y-intercept:

Domain:

Range:

b) $f(x) = x^2 + 2x - 2$



AoS:

Vertex:

Opens:

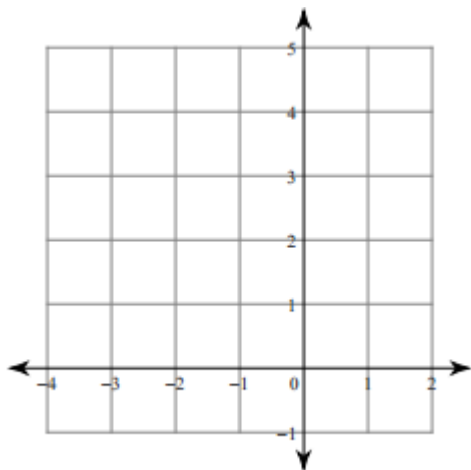
Min or Max:

y-intercept:

Domain:

Range:

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



AoS:

Vertex:

Opens:

Min or Max:

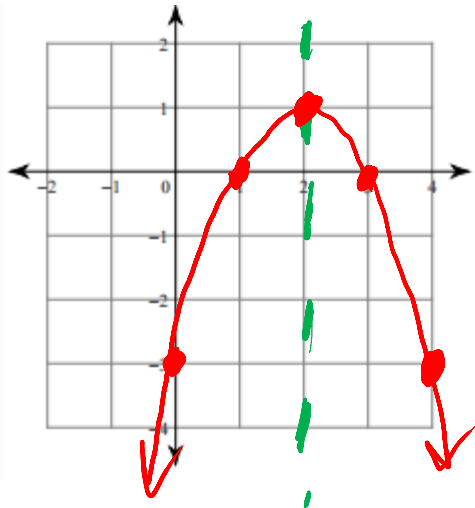
y-intercept:

Domain:

Range:

$$A = -1 \quad B = 4 \quad C = -3$$

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



$$f(1) = -(1^2) + 4(1) - 3 = 0$$

$$(1, 0)$$

AoS: $x = \frac{-B}{2A} = \frac{-4}{2(-1)} = 2$

Vertex: $f(2) = -(2^2) + 4(2) - 3 = 1$

Opens: Down $(2, 1)$

Min or Max: Max at 1

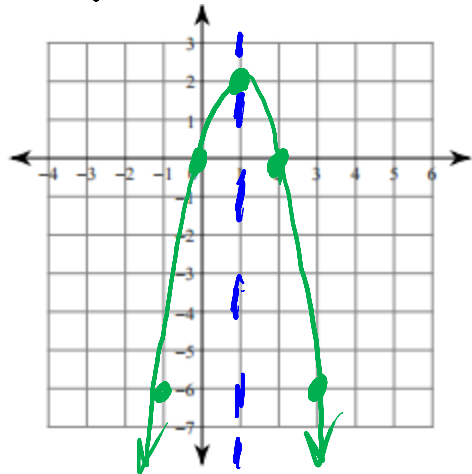
y-intercept: -3

Domain: $\mathbb{R}$

Range: $(-\infty, 1] \quad y \leq 1$

e) $f(x) = -2x^2 + 4x$

$$A = -2 \quad B = 4 \quad C = 0$$



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

$$(3, -6)$$

AoS: $x = \frac{-B}{2A} = \frac{-4}{2(-2)} = 1$

Vertex: $f(1) = -2(1)^2 + 4(1) = 2$

Opens: Down $(1, 2)$

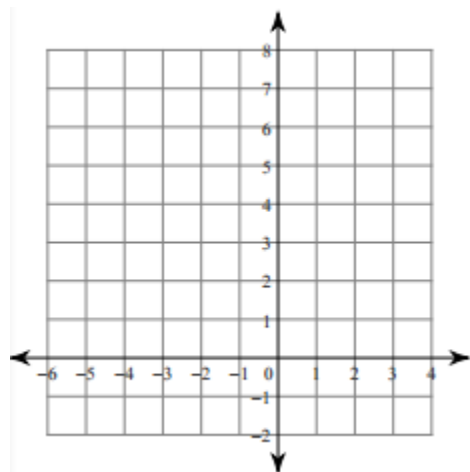
Min or Max: Max at 2

y-intercept: 0

Domain: $\mathbb{R}$

Range: $y \leq 2 \quad (-\infty, 2]$

f) $f(x) = 2x^2 + 4x + 1$



AoS:

Vertex:

Opens:

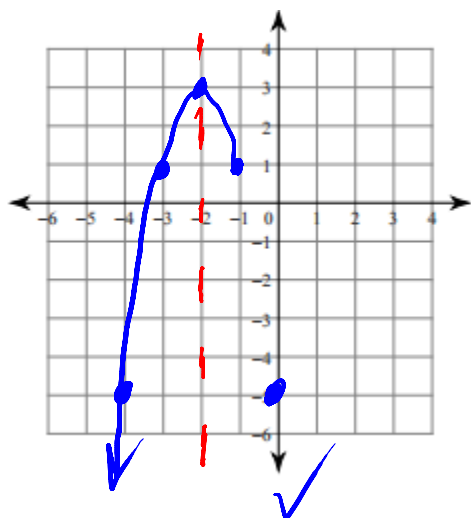
Min or Max:

y-intercept:

Domain:

Range:

g) $f(x) = -2x^2 - 8x - 5$



$$f(-1) = 1$$

AoS: $x = \frac{8}{2(-2)} = -2$

Vertex: $f(-2) = -2(-2^2) - 8(-2) - 5 = 3$
 $(-2, 3)$

Opens: Down

Min or Max: Max at 3

y-intercept: -5

Domain: $\mathbb{R}$

Range: $y \leq 3$

