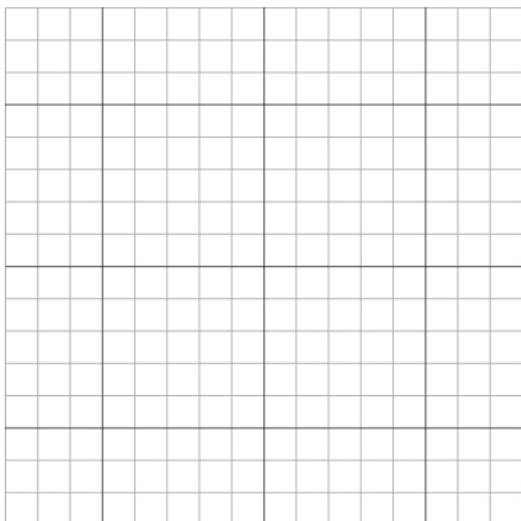


Name: _____ Date: _____

Interpreting Quadratic Graphs

Interpret the graph of the given functions and answer the questions that follow.

① $f(x) = x^2 + x$



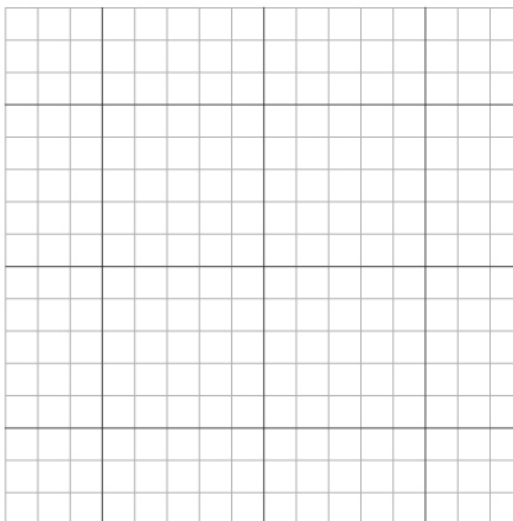
Vertex:

Maximum/Minimum:

Domain:

Range:

② $y = -x^2 - 8x - 12$



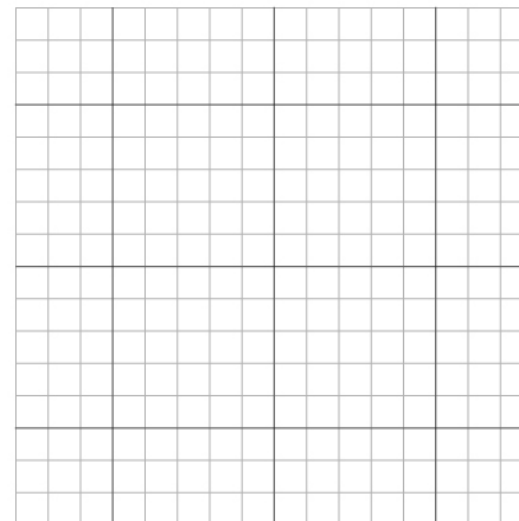
Vertex:

Maximum/Minimum:

Domain:

Range:

③ $y = (x + 3)^2 - 2$



Vertex:

Maximum/Minimum:

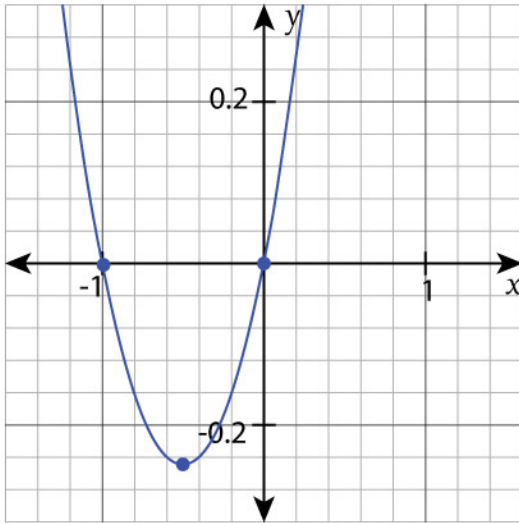
Domain:

Range:

Interpreting Quadratic Graphs

Answers

① $f(x) = x^2 + x$



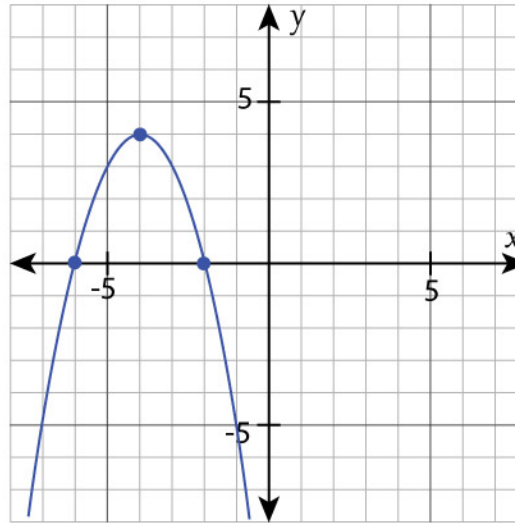
Vertex: $\left(-\frac{1}{2}, -\frac{1}{4}\right)$

Maximum/Minimum: Minimum

Domain: $\left[\begin{array}{l} \text{Solution: } -\infty < x < \infty \\ \text{Interval notation: } (-\infty, \infty) \end{array} \right]$

Range: $\left[\begin{array}{l} \text{Solution: } f(x) \geq -\frac{1}{4} \\ \text{Interval notation: } \left[-\frac{1}{4}, \infty\right) \end{array} \right]$

② $y = -x^2 - 8x - 12$



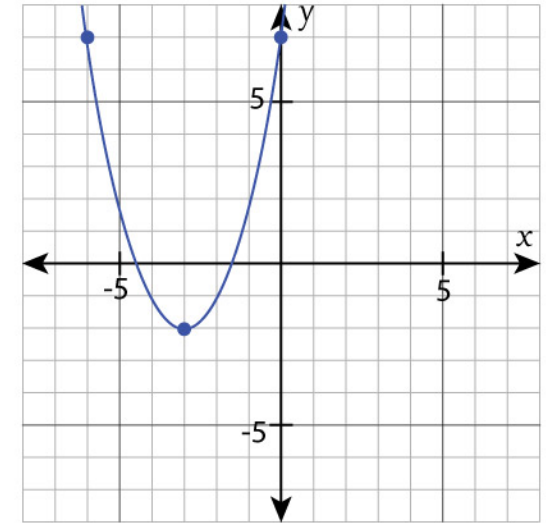
Vertex: $(-4, 4)$

Maximum/Minimum: Maximum

Domain: $\left[\begin{array}{l} \text{Solution: } -\infty < x < \infty \\ \text{Interval notation: } (-\infty, \infty) \end{array} \right]$

Range: $\left[\begin{array}{l} \text{Solution: } f(x) \leq 4 \\ \text{Interval notation: } (-\infty, 4] \end{array} \right]$

③ $y = (x + 3)^2 - 2$



Vertex: $(-3, -2)$

Maximum/Minimum: Minimum

Domain: $\left[\begin{array}{l} \text{Solution: } -\infty < x < \infty \\ \text{Interval notation: } (-\infty, \infty) \end{array} \right]$

Range: $\left[\begin{array}{l} \text{Solution: } f(x) \geq -2 \\ \text{Interval notation: } [-2, \infty) \end{array} \right]$