

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Learning Goal 3.2**

Given a quadratic function, identify the characteristics of graphs, including domain, range, intercepts, vertex and the axis of symmetry.

Graph  $j(x) = -2x^2 + 4x + 30$  and find the $x$  – intercept(s)

$x = -3, 5$

 $y$  – intercept(s)

$y = 30$

Domain

$\{x \mid x \in \mathbb{R}\}$

Range

$\{y \mid y \leq 32, y \in \mathbb{R}\}$

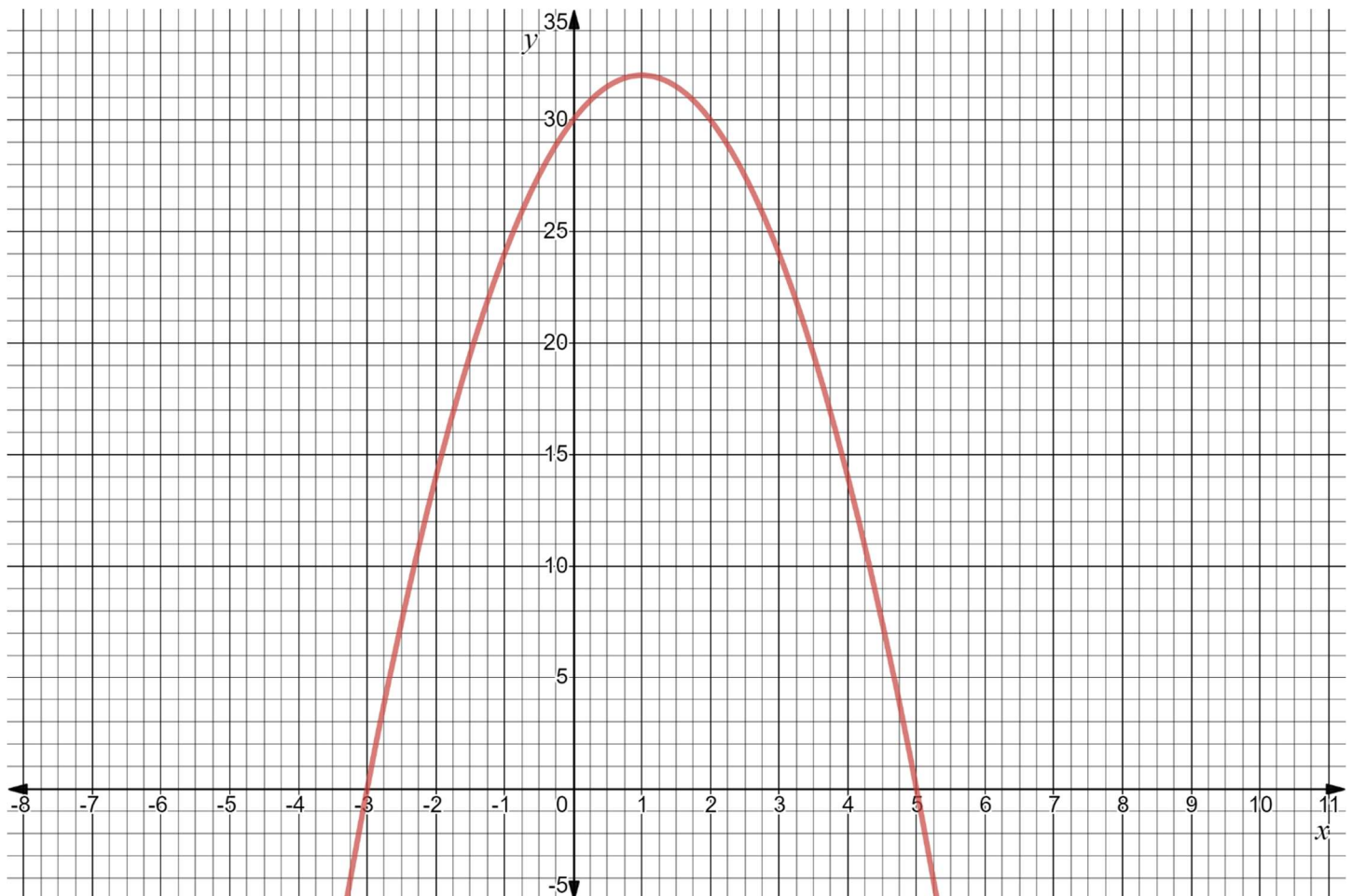
Axis of Symmetry

$x = 1$

Vertex

$(1, 32)$

Max/Min and value

Maximum at  $y = 32$ 

Graph  $k(x) = -\frac{1}{4}x^2 - 3x + 7$  and find the

$x$  – intercept(s)

$$x = -14, 2$$

$y$  – intercept(s)

$$y = 7$$

Domain

$$\{x \mid x \in \mathbb{R}\}$$

Range

$$\{y \mid y \leq 16, y \in \mathbb{R}\}$$

Axis of Symmetry

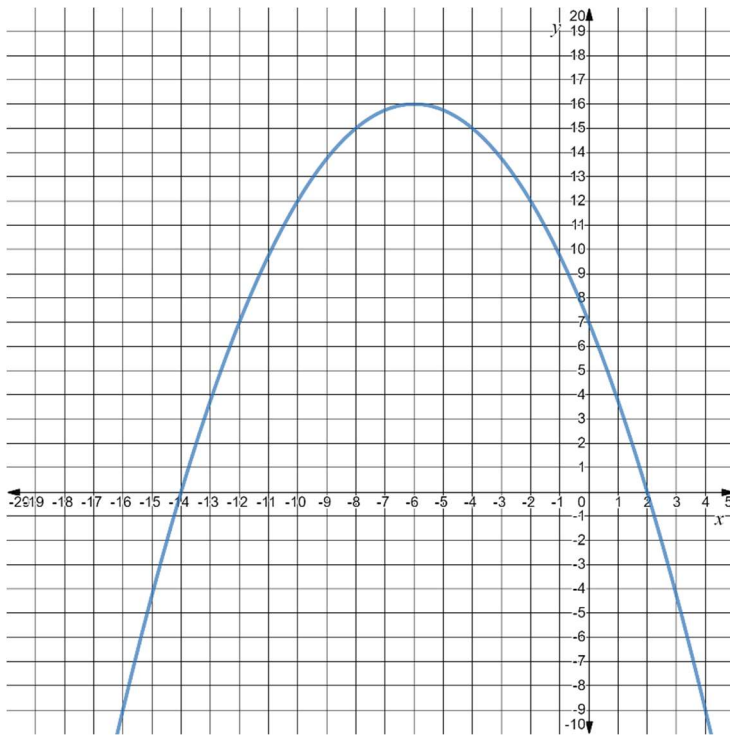
$$x = -6$$

Vertex

$$(-6, 16)$$

Max/Min and value

Maximum at  $y = 16$



Graph  $m(x) = 2x^2 - 13x + 6$  and find the

$x$  – intercept(s)

$$x = \frac{1}{2}, 6$$

$y$  – intercept(s)

$$y = -6$$

Domain

$$\{x \mid x \in \mathbb{R}\}$$

Range

$$\{y \mid y \geq -\frac{121}{8}, y \in \mathbb{R}\}$$

Axis of Symmetry

$$x = \frac{13}{4}$$

Vertex

$$\left(\frac{31}{4}, -\frac{121}{8}\right)$$

Max/Min and value

Minimum at  $y = -\frac{121}{8}$

