

KEY

Section 2.1b – Non-Linear Equations – Proficiency Check

Graph the following. Use the table of values if necessary.

Include: Vertex, Axis of Symmetry, Domain, Range

EMERGING

1. $y = x^2 + 4$

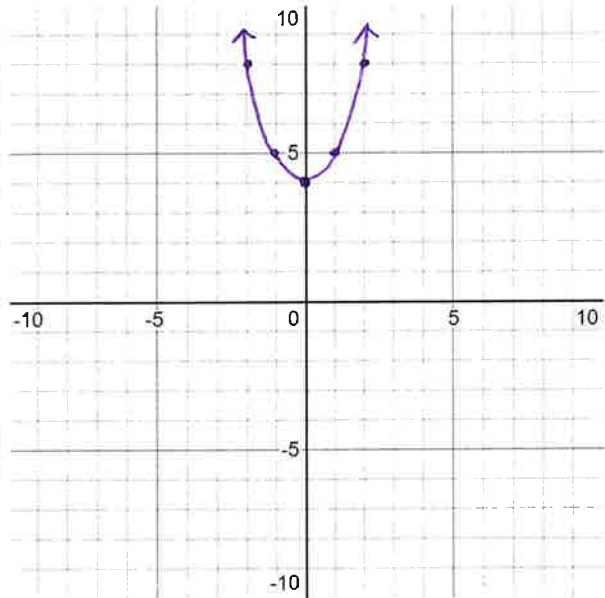
Vertex: $(0, 4)$

Axis of Symmetry: $x = 0$

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

Range: $\{y \mid y \geq 4; y \in \mathbb{R}\}$

x	y



PROFICIENT

2. $y = (x - 3)^2 - 4$

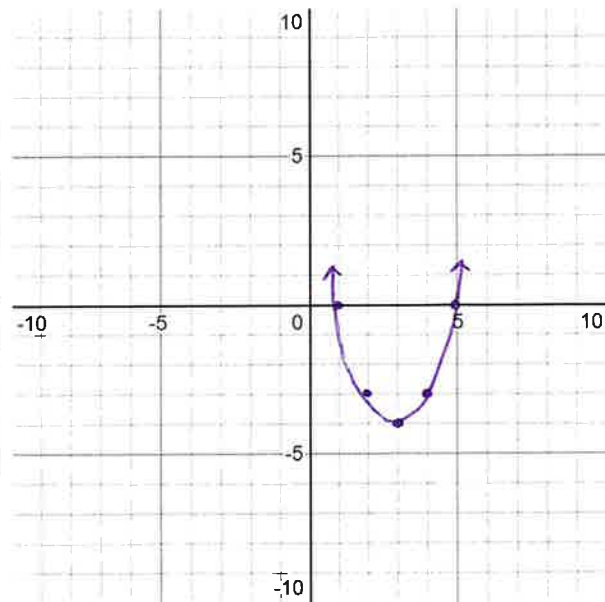
Vertex: $(3, -4)$

Axis of Symmetry: $x = 3$

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

Range: $\{y \mid y \geq -4; y \in \mathbb{R}\}$

x	y



changes 'up' value by a factor of 2

3. $y = 2(x + 4)^2 - 2$

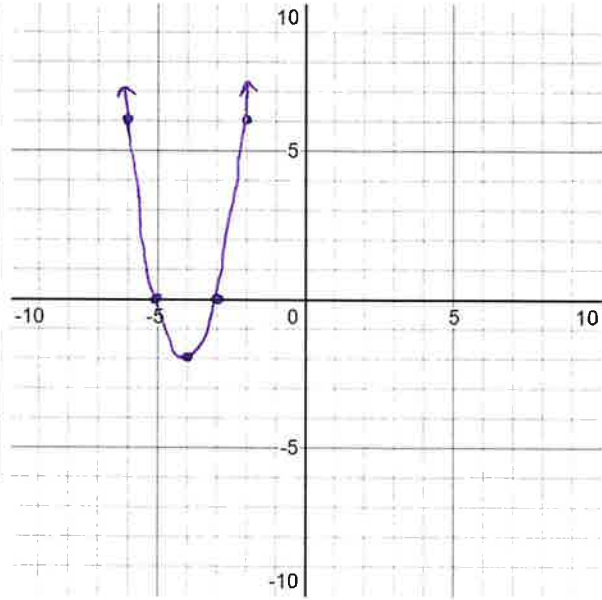
Vertex: $(-4, -2)$

Axis of Symmetry: $x = -4$

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

Range: $\{y \mid y \geq -2; y \in \mathbb{R}\}$

x	y



changes 'up' by factor of -1/2

EXTENDING

4. $y = -\frac{1}{2}(x + 6)^2 + 4$

Vertex: $(-6, 4)$

Axis of Symmetry: $x = -6$

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

Range: $\{y \mid y \leq 4; y \in \mathbb{R}\}$

x	y

