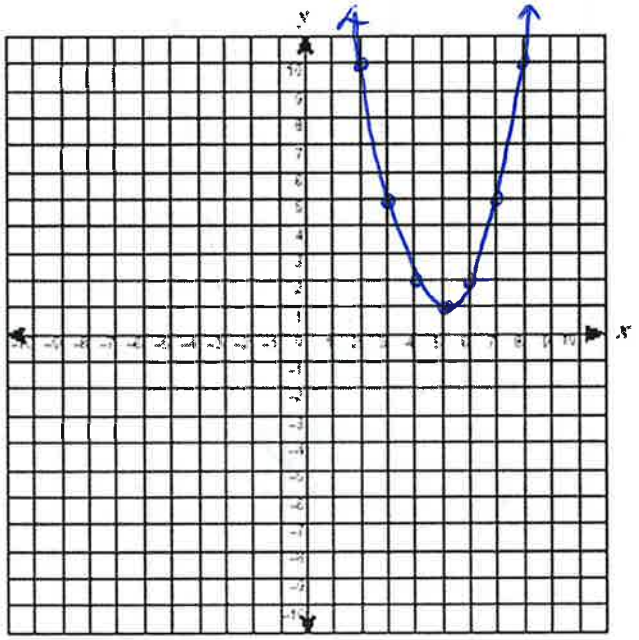
Name: _____ Date: Key

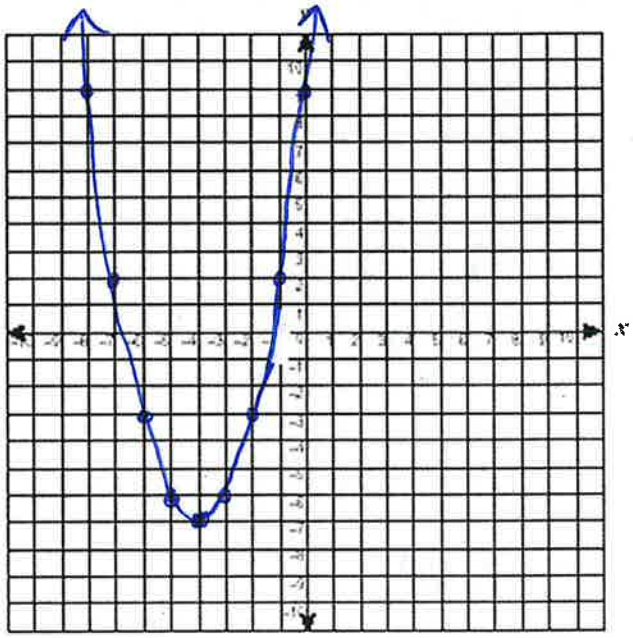
3.1/3.3 **Worksheet – Graphing Quadratic Functions in Vertex Form**

For each of the following quadratic functions, graph the parabola and state the vertex, axis of symmetry equation, max/min, domain, and range.

1) $y = (x-5)^2 + 1$



2) $y = (x+4)^2 - 7$

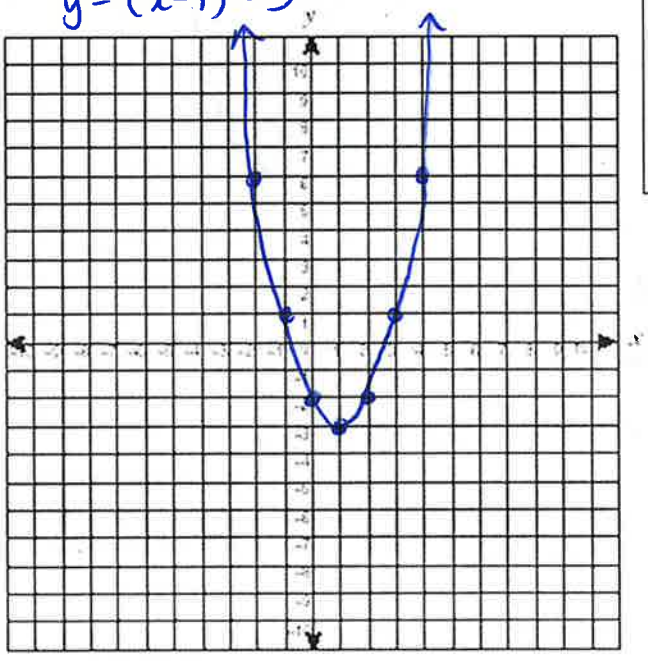


1. Vertex: $(5, 1)$
   A of S eqn: $x = 5$
   Max/(Min): $y = 1$
   Domain: $x \in \mathbb{R}$
   Range: $y \geq 1$

2. Vertex: $(-4, -7)$
   A of S eqn: $x = -4$
   Max/(Min): $y = -7$
   Domain: $x \in \mathbb{R}$
   Range: $y \geq -7$

3) $y = -3 + (x-1)^2$

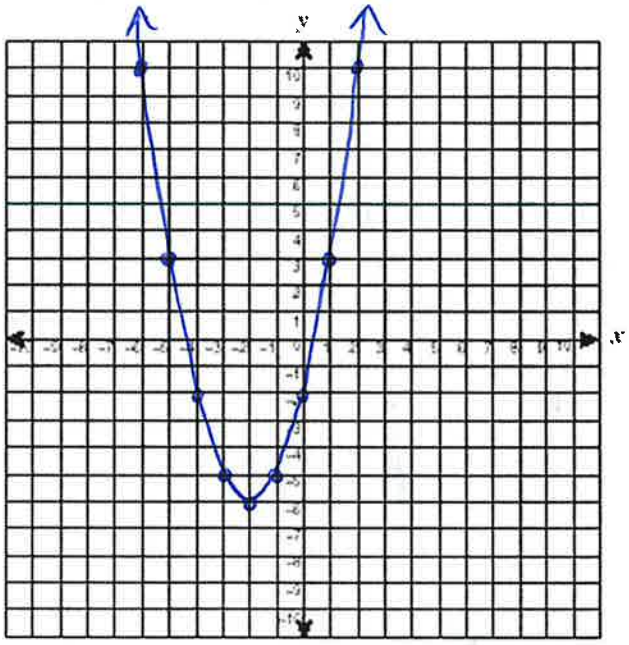
$y = (x-1)^2 - 3$



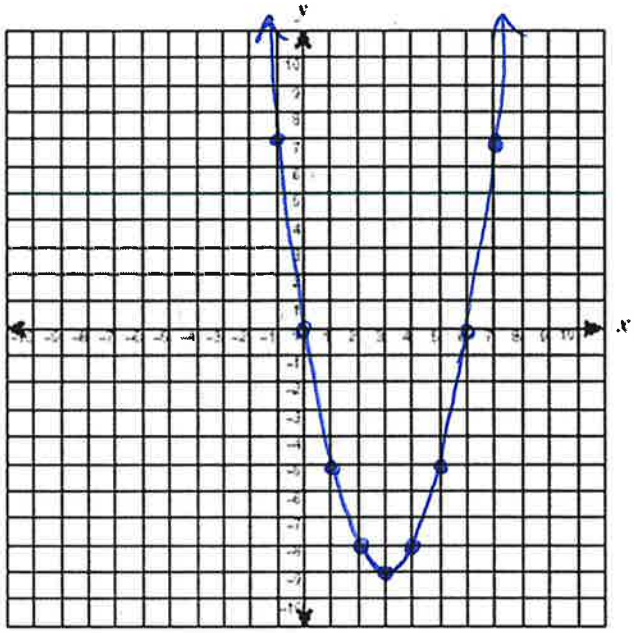
3. Vertex: $(1, -3)$
   A of S eqn: $x = 1$
   Max/(Min): $y = -3$
   Domain: $x \in \mathbb{R}$
   Range: $y \geq -3$

For each of the following quadratic functions, graph the parabola and state the vertex, axis of symmetry equation, max/min, domain, and range.

4) $y = (x+2)^2 - 6$



5) $y = (x-3)^2 - 9$



4. Vertex: $(-2,-6)$

A of S eqn: $x = -2$

Max/Min: $y = -6$

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

Range: $y \geq -6$

5. Vertex: $(3,-9)$

A of S eqn: $x = 3$

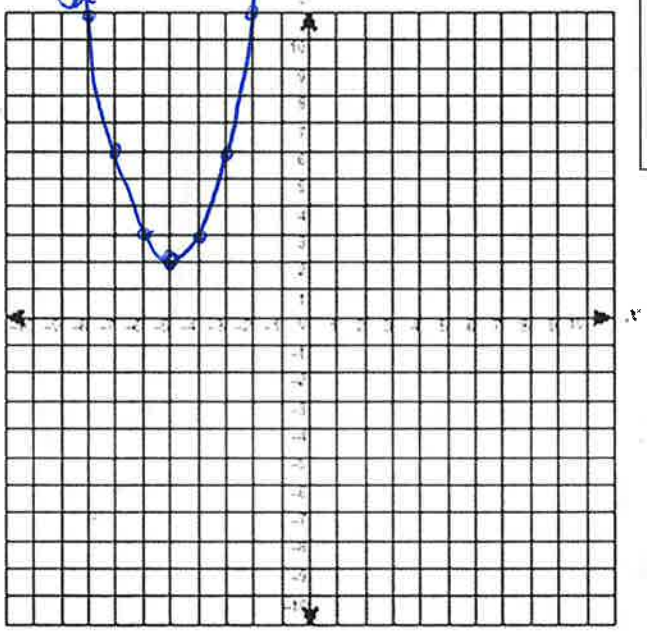
Max/Min: $y = -9$

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

Range: $y \geq -9$

6) $y = 2 + (x+5)^2$

$y = (x+5)^2 + 2$



6. Vertex: $(-5,2)$

A of S eqn: $x = -5$

Max/Min: $y = 2$

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

Range: $y \geq 2$