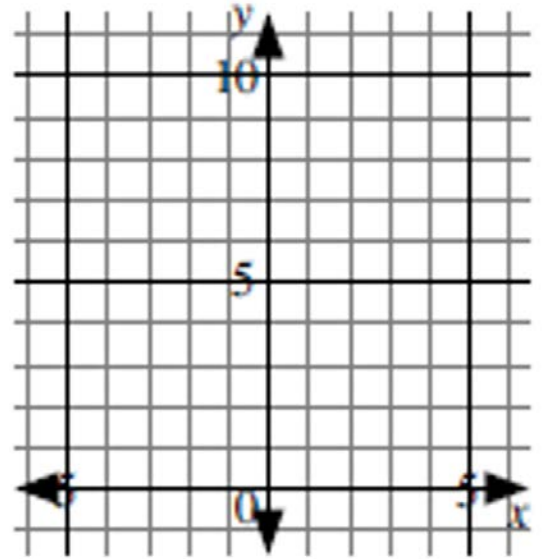# 7.2 – Analyzing Quadratic Functions

Graph the function with equation $y = x^2$ by completing the table of values. Join the points with a smooth curve. The graph of this function is called a <u>parabola.</u>

x	−3	−2	−1	0	1	2	3
y							

The **<u>axis of symmetry</u>** is the "mirror" line which splits the parabola in half. State the equation of the axis of symmetry

The **<u>vertex</u>** of a parabola is where the axis of symmetry intersects the parabola. The vertex can represent a <u>minimum point</u> or <u>maximum point</u> depending on whether the parabola opens up or down.

Label the vertex V on the graph and state its coordinates.

The maximum or minimum **value** of a quadratic function occurs at the vertex and is represented by the y-coordinate of the vertex. Complete the following:

The _____ value of the function with equation $y = x^2$ is _____.

State the domain and range of the function with equation $y = x^2$, $x \in R$.

Domain: _____   Range: _____