**Finding the Range and Domain**

We know that the domain for any quadratic function is all real numbers, so that won’t be a problem. The difficulty can arise from finding the range of the function. To find the range of a quadratic function, we need to know how it opens, and the y value of the vertex. As it was discussed earlier, the y value of the vertex is the maximum or minimum value of a parabola, depending on how it opens; so it is the absolute highest or lowest point on the graph of the function.

*The following is true for a quadratic function in standard form* $y = a(x - h)^2 + k$.

*If* $a > 0$, *the range is* $[k, \infty)$.

*If* $a < 0$, *the range is* $(-\infty, k]$. 