

KEY

Graphing Quadratic Functions Exploration

1. Using a graphing calculator, graph the function $f(x) = x^2$; sketch the graph on the grid using 5 exact points.

a. What is the domain? $\text{all } \mathbb{R}$

b. What is the range? $y \geq 0$

2. Graph (in a different color) $f(x) = x^2 + 2$ on the same graph using 5 exact points. Describe the difference between this graph and the graph of $f(x) = x^2$.

It all moved up 2

a. What is the domain? $\text{all } \mathbb{R}$

b. What is the range? $y \geq 2$

3. Graph (in a different color) $f(x) = x^2 - 3$ on the same graph using 5 exact points. Describe the difference between this graph and the graph of $f(x) = x^2$.

It moved down 3

a. What is the domain? $\text{all } \mathbb{R}$

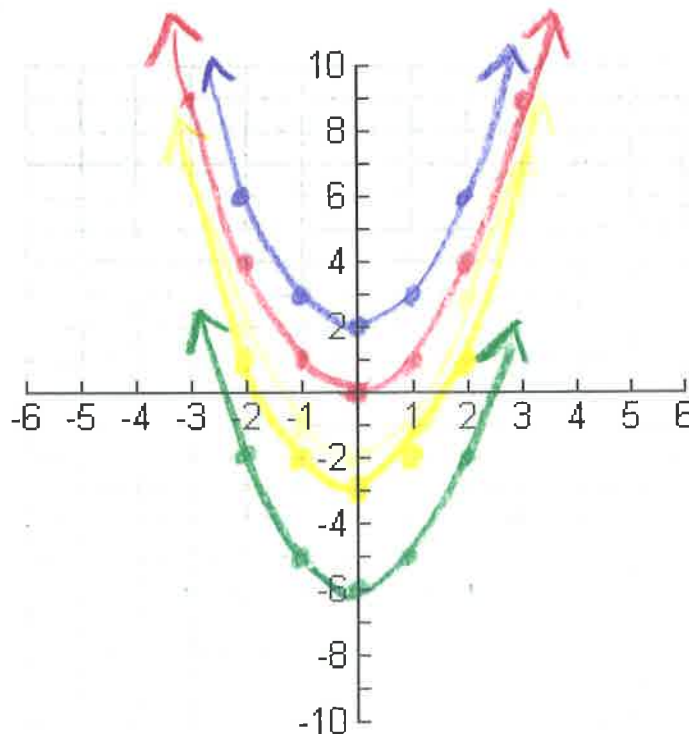
b. What is the range? $y \geq -3$

4. Describe the effect of k on the equation $f(x) = x^2 + k$

k Moves graph up or down vertical

5. Create and graph your own function and determine if your hypothesis (answer from #4) is correct.

$$y = x^2 - 6$$



6. Graph (in a different color) $f(x)=(x+2)^2$ on the provided graph using 5 exact points. Describe the difference between this graph and the graph of $f(x)=x^2$.

It moved Left 2

a. What is the domain? all \mathbb{R}

b. What is the range? $y \geq 0$

7. Graph (in a different color) $f(x)=(x-3)^2$ on the same graph using 5 exact points. Describe the difference between this graph and the graph of $f(x)=x^2$.

It moved Right 3

a. What is the domain? all \mathbb{R}

b. What is the range? $y \geq 0$

8. Describe the effect of h on the equation $f(x)=(x-h)^2$

The graph moves left/right horizontal.

FB

It moves the opposite direction of h

9. Create and graph your own function and determine if your hypothesis (answer from #8) is correct.

