

For each of the following functions, write the function in all spaces for the transformations it has.

Reflections over x-axis

$f(x)$ $h(x)$
 $k(x)$ $p(x)$

$f(x)$ $g(x)$
 $h(x)$ $k(x)$
 $m(x)$ $n(x)$ $p(x)$
Shifts

Left and Right

Stretches and Shrinks

$f(x)$ $h(x)$
 $j(x)$ $m(x)$
 $n(x)$ $p(x)$

$f(x)$ $g(x)$
 $j(x)$ $m(x)$
 $p(x)$

Shifts

Up and Down

Quadratic Functions

$$f(x) = -2(x - 3)^2 + 5$$

$$g(x) = (x + 5)^2 - 7$$

$$h(x) = -1/2(x + 6)^2$$

$$j(x) = 3x^2 - 8$$

$$k(x) = -(x - 9)^2$$

$$m(x) = 2/5(x + 8)^2 - 1$$

$$n(x) = 5/2(x - 2)^2$$

$$p(x) = -5.5(x + 3)^2 + 6$$

Write the equation for a quadratic function with the following characteristics. REMEMBER, IT NEEDS AN X^2 OR AN $(X \pm h)^2$ TO BE A QUADRATIC.

1. Reflects over x-axis
Shifts left 3

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

3. Reflects over the x-axis
Compresses by 3/5
Shifts down 8

$$y = -\frac{3}{5}x^2 - 8$$

4. Reflects over the x-axis
Stretches by 5
Shifts left 8 and down 2

$$y = -5(x + 8)^2 - 2$$