

Precalculus

1-07 Transformations of Functions

Translations (shift)

- _____ the graph
- Horizontal
 - $g(x) = f(x - h)$
 - h shifts _____
- Vertical
 - $g(x) = f(x) + k$
 - k shifts _____

For $f(x) = |x|$, write a function with a vertical shift of 3 down and 2 right.

Dilations

- Stretch/Shrink
- Horizontal
 - $g(x) = f(bx)$
 - Stretch by _____
- Vertical
 - $g(x) = af(x)$
 - Stretch by _____

Put it all together

$$g(x) = af(bx - h) + k$$

- $a =$ _____ stretch
- $\frac{1}{b} =$ _____ stretch
- $h =$ _____ shift right
- $k =$ _____ shift up

Reflections

- Vertical
 - _____
 - $g(x) = -f(x)$
- Horizontal
 - _____
 - $g(x) = f(-x)$

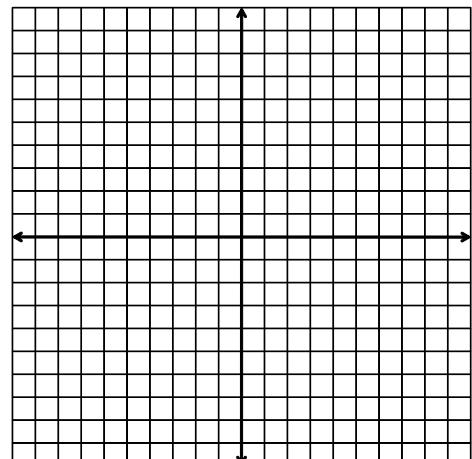
Given $g(x) = 2 - (x + 5)^2$

Identify the parent function

Describe the transformations

Sketch the graph

Use functional notation to write g in terms of f



Write the function for

