

Warm Up

Name KEN

Date _____ Per _____

Let $f(x) = (4)^x$

Write an equation for a new function, $g(x)$, with the following transformation from $f(x)$:

1. Vertical translation up 3 units

$g(x) = 4^x + 3$

2. Vertical translation down 6 units

$g(x) = 4^x - 6$

3. Horizontal translation left 2 units

$g(x) = 4^{x+2}$

4. Horizontal translation right 5 units

$g(x) = 4^{x-5}$

5. Reflection over the x-axis

$g(x) = -4^x$

6. Vertical stretch by 8

$g(x) = 8(4)^x$

7. Reflection over the x-axis and a vertical shrink by $\frac{2}{3}$

$g(x) = -\frac{2}{3}(4)^x$