Name: _____ **Date:** _____ **Period:** _____

11.4 Vertical Shifts

1) Translate $f(x) = -5x + 2$, vertically 7 units

New equation: _____

Y-intercept: _____

2) Translate $f(x) = \left(\frac{1}{3}\right)^x + 9$, vertically -7 units

New equation: _____

Y-intercept: _____

3) Translate $f(x) = 4x + 1$, vertically -8 units

New equation: _____

Y-intercept: _____

4) Translate $f(x) = \left(\frac{4}{5}\right)^x - 6$, vertically -11 units

New equation: _____

Y-intercept: _____

5) Translate $f(x) = -\frac{7}{8}x + 5$, vertically 2 units

New equation: _____

Y-intercept: _____

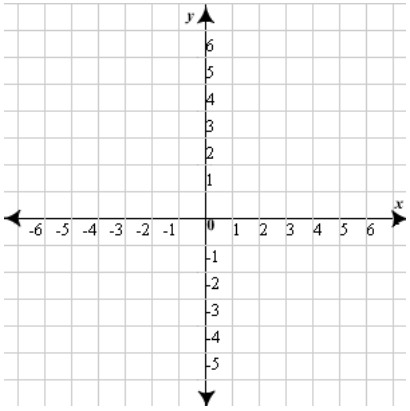
6) Translate $f(x) = -3^x + 5$, vertically 5 units

New equation: _____

Y-intercept: _____

Draw a sketch of the functions below:

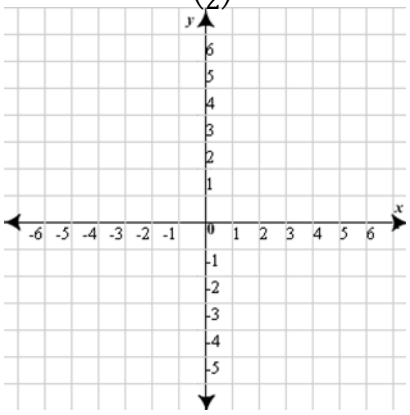
$6a)\ f(x) = 2x + 1$



Slope: _____

Y-intercept: (,)

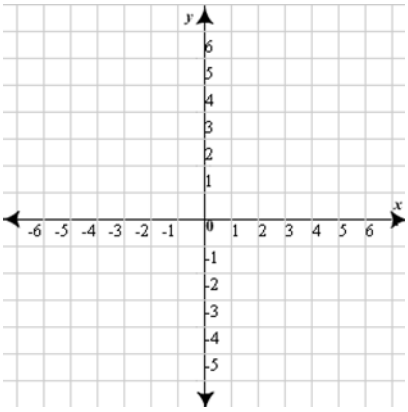
$7a)\ f(x) = \left(\frac{1}{2}\right)^x + 1$



Slope: _____

Y-intercept: (,)

$6b)\ f(x) = 2x - 2$

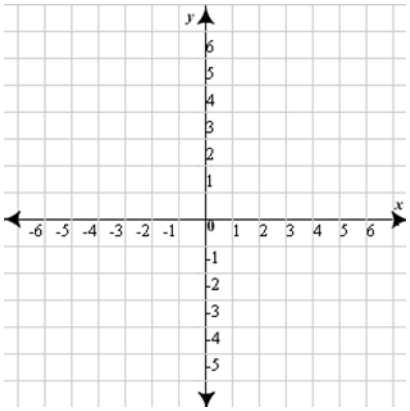


Slope: _____

Y-intercept: (,)

What is the vertical shift? _____

$7b)\ f(x) = \left(\frac{1}{2}\right)^x + 5$

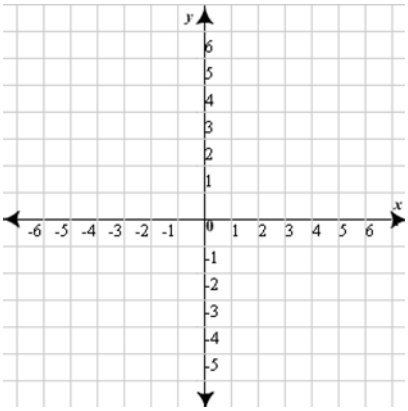


Slope: _____

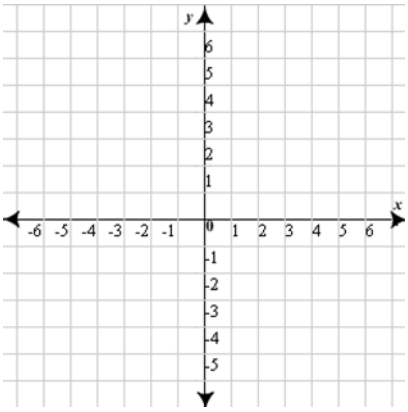
Y-intercept: (,)

What is the vertical shift? _____

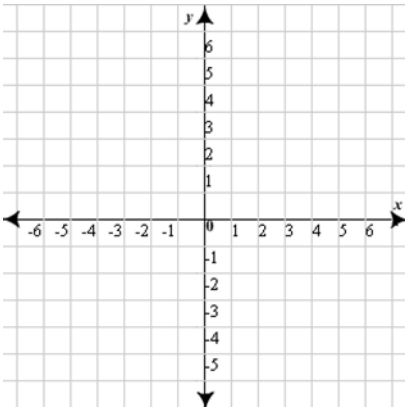
8) Translate $f(x) = -\frac{2}{3}x + 5$, vertically -3 units



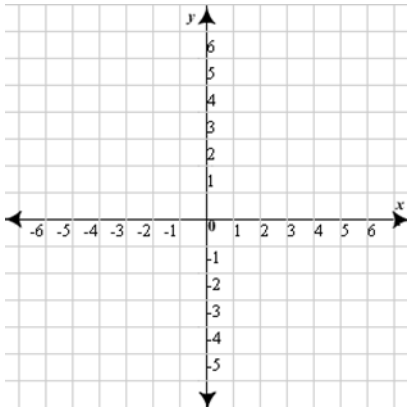
9) Translate $f(x) = 3^x - 4$, vertically 2 units



10) Translate $f(x) = \frac{1}{2}x$, vertically -4 units



11) Translate $f(x) = 2^x - 3$, vertically 2 units



Review:

12) If $f(x) = -2x + 4$, find $f(5)$.

13) If $f(x) = 6x - 2$, find $f(-3)$.

14) If $f(x) = -2x + 4$, and $g(x) = 5x - 2$, find $g\big(f(-2)\big)$.