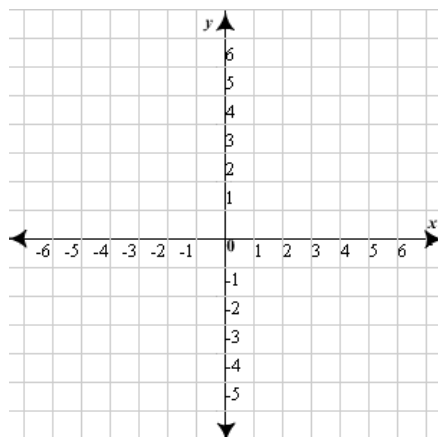


Transformations of Functions HONORS
Worksheet #3

Name _____
Date _____ Hour _____

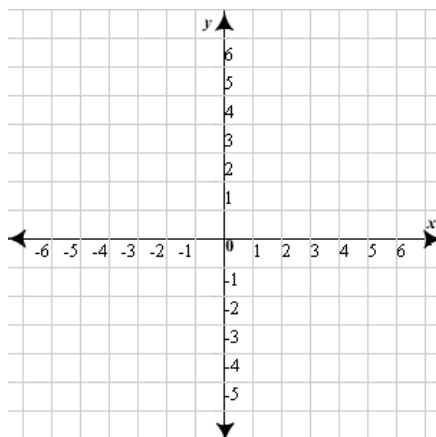
Describe each transformation of the parent function. Then graph the parent function (in pencil) and the transformation for each function (in color) below.

1) $f(x) = (x + 4)^2$



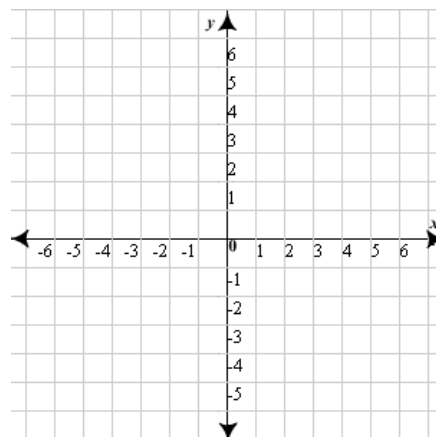
Transformation(s):

2) $f(x) = x^2 + 4$



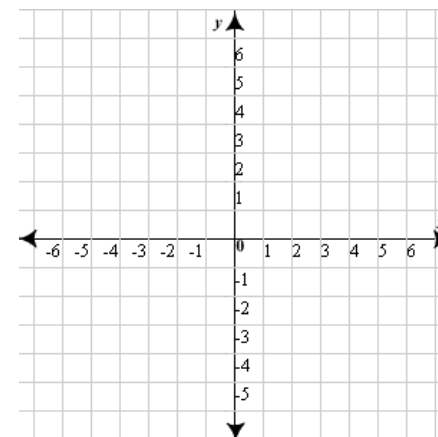
Transformation(s):

3) $f(x) = \log x - 3$



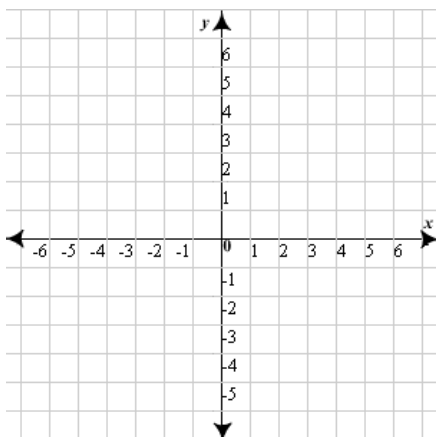
Transformation(s):

4) $f(x) = \log(x - 3)$



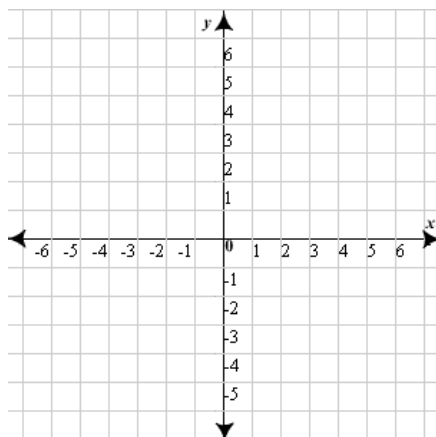
Transformation(s):

5) $f(x) = x + 5$

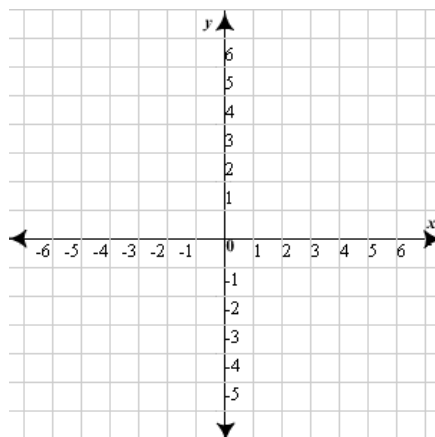


Transformation(s):

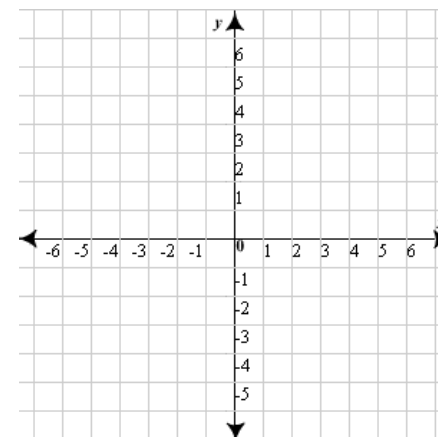
6) $f(x) = x - 5$



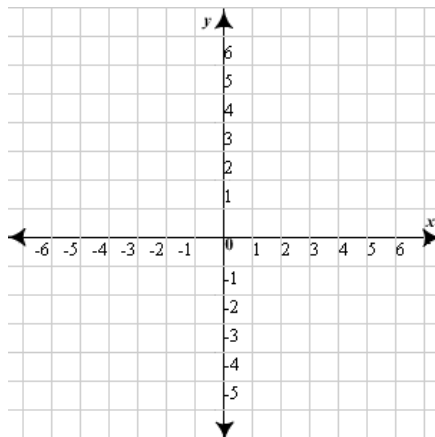
7) $f(x) = |x + 5|$



8) $f(x) = x + 5$

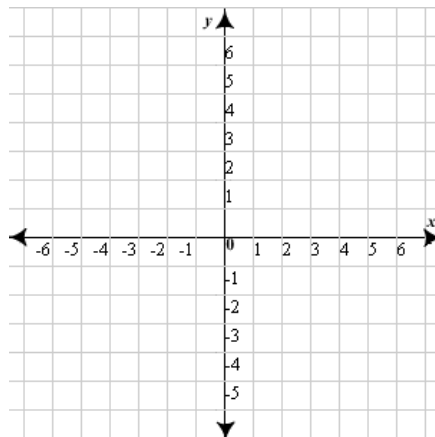


9) $f(x) = \left(\frac{1}{2}\right)^x + 6$



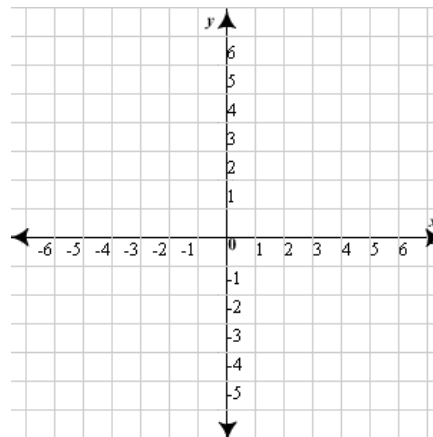
Transformation(s):

10) $f(x) = \frac{1}{2}^{x+6}$



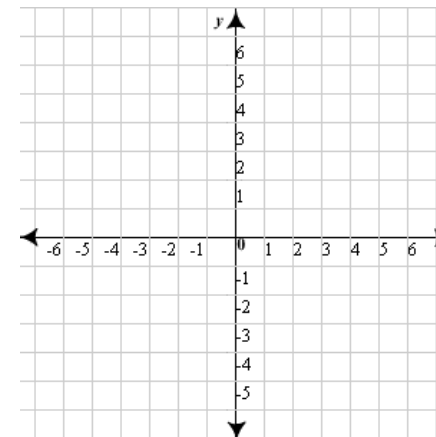
Transformation(s):

11) $f(x) = 2^{x+4}$



Transformation(s):

12) $f(x) = 2^x + 4$



Transformation(s):

Compare each pair of functions from the same family. What do they have in common? What is the difference between the two transformations?

Given the parent function and a description of the transformation, write the equation of the transformed function, $f(x)$.

13) Quadratic – vertical shift up 3 _____

14) Linear – vertical shift down 7 _____

15) Logarithmic – horizontal shift right 2 _____

16) Exponential – vertical shift down 4 _____

17) Absolute Value – vertical shift up 6 _____

18) Absolute Value – vertical shift up 3, horizontal shift left 4 _____

19) Logarithmic – horizontal shift right 2, vertical shift down 2 _____

20) Exponential – vertical shift down 4, horizontal shift right 1 _____

21) Quadratic – vertical shift up 3, horizontal shift left 4 _____

22) Linear – vertical shift up 3 _____