

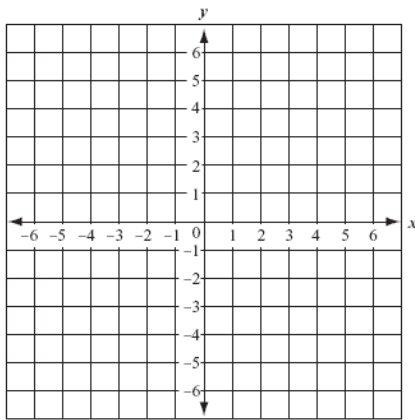
**Homework: Graphing Exponential Functions with Transformation** (Check-off Thursday)

Describe the transformations that map the function  $y = 2^x$  onto each of the following functions...

a.)  $y = 2^x - 4$

Transformation(s):

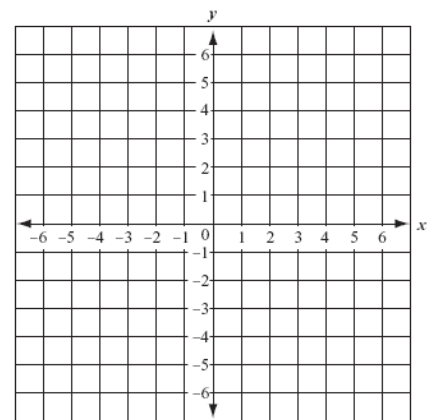
Graph:  
(Show work)



b.)  $y = (2^{x+3})$

Transformation(s):

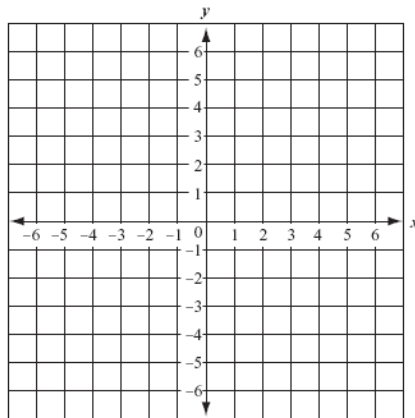
Graph:  
(Show work)



c.)  $y = -2^x$

Transformation(s):

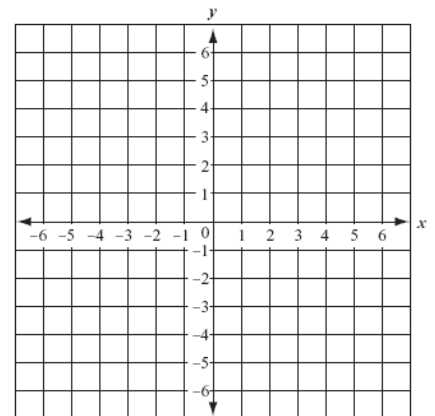
Graph:  
(Show work)



d.)  $y = -2(2^{x+5}) - 3$

Transformation(s):

Graph:  
(Show work)



e.) On the back of this paper create a base 3 exponential growth function with a vertical shrink, a horizontal reflection, a horizontal translation left, and a vertical translation up, and graph it.