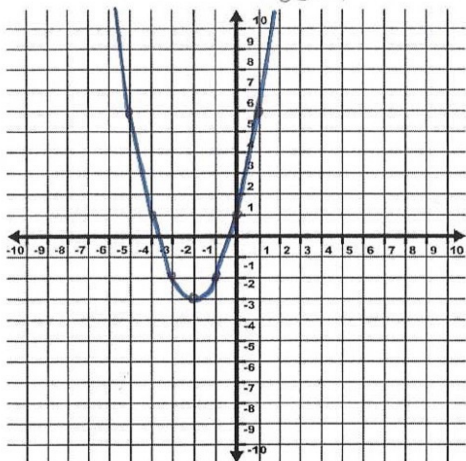
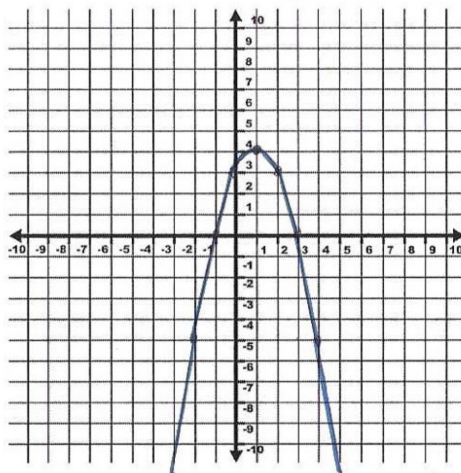


In the following functions, the transformations have been combined on the quadratic function that you just discovered. Graph the following functions with at least 3 precise points.

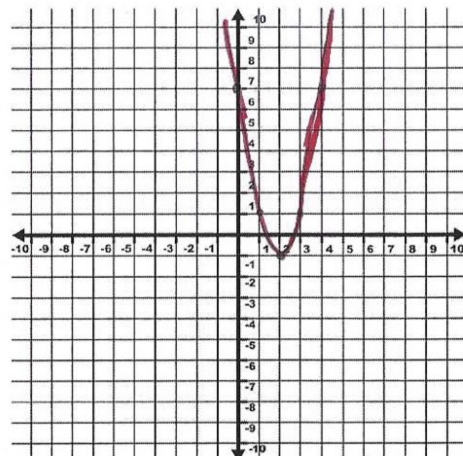
1.)  $f(x) = (x+2)^2 - 3$  vertex  $(-2, -3)$   
 $a = 1$



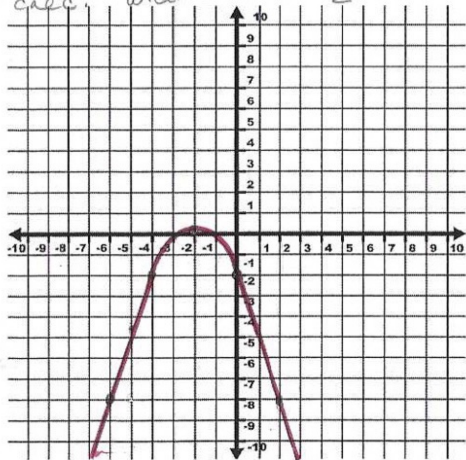
2.)  $f(x) = -[x-1]^2 + 4$  vertex  $(1, 4)$   
 $a = -1$   
*upside down*



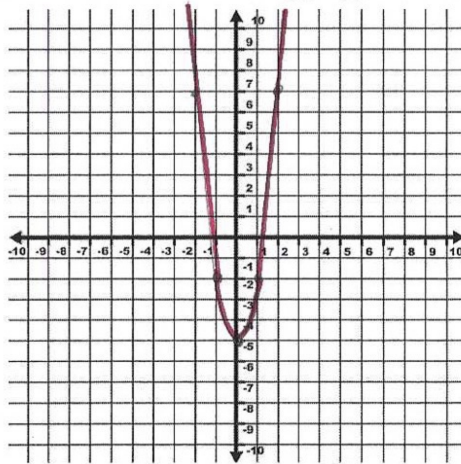
3.)  $f(x) = 2(x-2)^2 - 1$  vertex  $(2, -1)$   
 $a = 2$   
*narrower*



4.)  $f(x) = -\frac{1}{2}(x+2)^2$  vertex  $(-2, 0)$   
 $a = -\frac{1}{2}$   
*upside down*  
*use calc.*  
*2 wider*



5.)  $f(x) = 3x^2 - 5$  vertex  $(0, -5)$   
 $a = 3$   
*narrower*



6.)  $f(x) = -(x+3)^2 + 4$  vertex  $(-3, 4)$   
 $a = -1$   
*upside down*

