Demonstration 0 : Precalc Review - Transformations of Functions MATH 251, CALCULUS I, SPRING 2014

Download the attached *desmos* demonstration. For each transformation move the slider associated with the transformation variable to see the effect of the transformation on the graph.

Given the graph of $y = f(x)$

1. $y = f(x) + a$ – Upward shift of a units for $a > 0$ and Downward shift for $a < 0$.
2. $y = f(x + b)$ – Shift of b units to the right for $b < 0$ and b units to the left for $b > 0$.
3. $y = cf(x)$ – Stretch ($c > 1$) or Shrink ($c < 1$) the graph of $y = f(x)$ vertically by a factor of c.
4. $y = f(kx)$ – Shrink ($k > 1$) or Stretch ($k < 1$) the graph of $y = f(x)$ horizontally by a factor of k.
5. $y = f(-x)$ – Reflect the graph of $y = f(x)$ about the $y - axis$.
6. $y = -f(x)$ – Reflect the graph of $y = f(x)$ about the $x - axis$.