**Activity 2.1.3b: Stretch It! Part Two**

**Part 1: Investigating Vertical Stretch/Compression**

1. Type x^2 into the input box and press enter.
2. Click the red button to explore the graph of $g\left(x\right)=k\*f\left(x\right)$.
3. Move the slider to change the value of $k$, or enter values into the input box.
4. Make a conjecture about how the value of $k$ transforms the graph of *f*(*x*) to the graph of *g*(*x*), when $k$ is on the “outside” of the function.
5. Does your conjecture hold if $0<k<1$? If not, modify your conjecture.
6. Does your conjecture hold if $k>1$? If not, modify your conjecture.
7. Does your conjecture hold if $k=0$? If not, modify your conjecture.
8. Does your conjecture still hold if $k<0$? If not, modify your conjecture.

**Part 2: Investigating Horizontal Stretch/Compression**

1. Type x^2 into the input box and press enter.
2. Click the blue button to explore the graph of $h\left(x\right)=f(k\*x)$.
3. Move the slider to change the value of $k$ or enter values into the input box.
4. Make a conjecture about how the value of $k$ transforms the graph of $f(x)$ to the graph of $h(x)$, when $k$ is on the “inside” of the function.
5. Does your conjecture hold for $0<k<1$? If not, modify your conjecture.
6. Does your conjecture hold for $k>1$? If not, modify your conjecture.
7. Does your conjecture hold if $k=0$? If not, modify your conjecture.
8. Does your conjecture still hold if $k<0$? If not, modify your conjecture.