

Function Transformation

Review of basic concept:

Vertical and Horizontal Shifts for $f(x)$ (suppose $c > 0$)

- a) $y = f(x) + c$, shift of the graph c units upward
- b) $y = f(x) - c$, shift of the graph c unit downward
- c) $y = f(x - c)$, shift of the graph c units to the right
- d) $y = f(x + c)$, shift of the graph c units to the left

Vertical and Horizontal Stretching and Reflecting of $f(x)$ (suppose $c > 1$)

- e) $y = cf(x)$, vertical stretch of the graph by a factor of c
- f) $y = (1/c)f(x)$, vertical compression of the graph by a factor of c
- g) $y = f(cx)$, horizontal compression of the graph by a factor of c
- h) $y = f(x/c)$, horizontal stretch of the graph by a factor of c
- i) $y = -f(x)$, reflection of the graph about the x-axis
- j) $y = f(-x)$, reflection of the graph about the y-axis

Types of Functions and Worksheets to practice transformation identification.

- a) [Quadratic Function A](#)
- b) [Cubic Function A](#)
- c) [Algebraic Function A](#)
- d) [Log Function A](#)
- e) [Trig Function A](#)
- a) [Quadratic Function B](#)
- b) [Cubic Function B](#)
- c) [Algebraic Function B](#)
- d) [Log Function A](#)
- e) [Trig Function A](#)

