

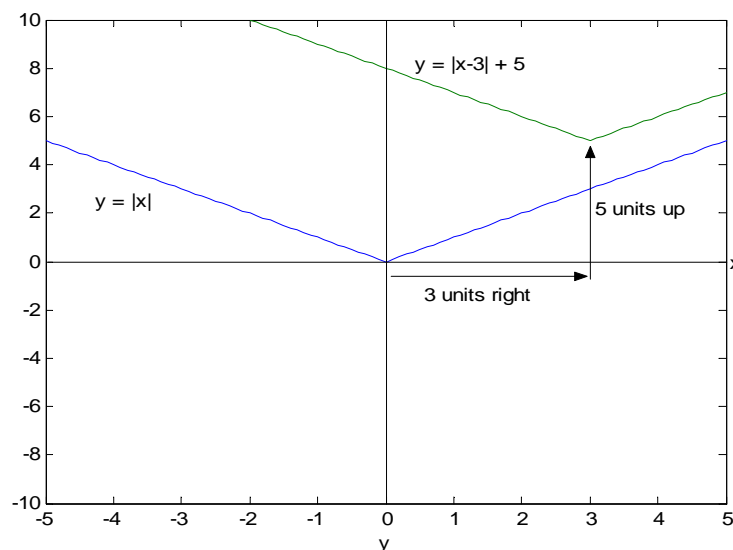
Parent Graphs and Transformations

A picture of a graph can easily be created by using transformations on the parent graph of a function. This is helpful in saving time by not having to do needless calculations. The following concept can be applied.

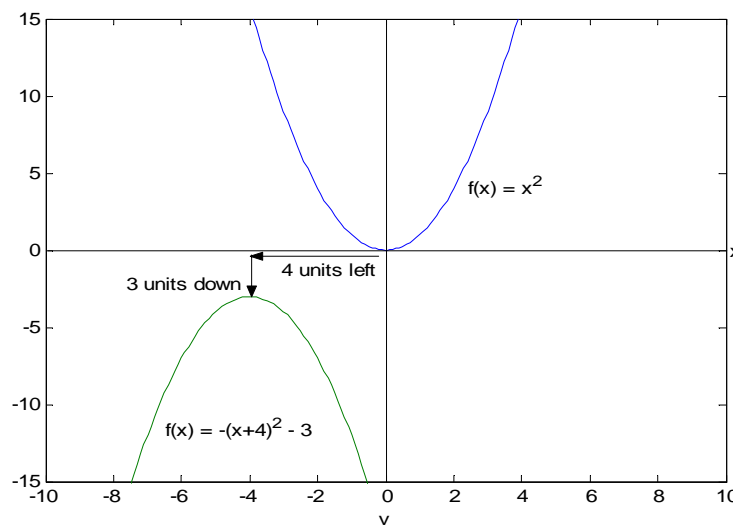
Shift of a Graph:

When the function of the graph is $y = \pm f(x - h) + k$, then a shift of the original graph of $y = f(x)$ can be created by moving h -units in the x -direction and k -units in the y -direction. If there is a negative sign in front of the function, then the graph is reflected over the x -axis.

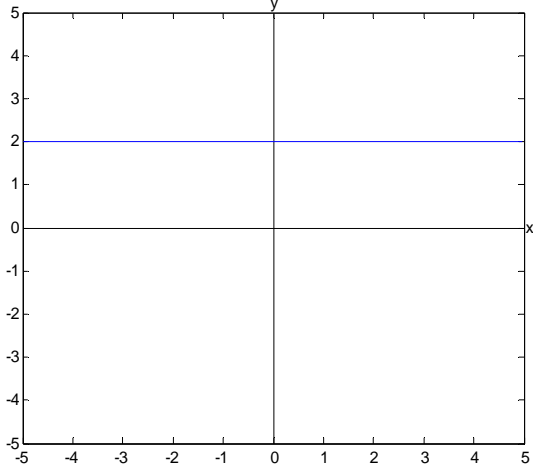
EX.1 $f(x) = |x - 3| + 5$



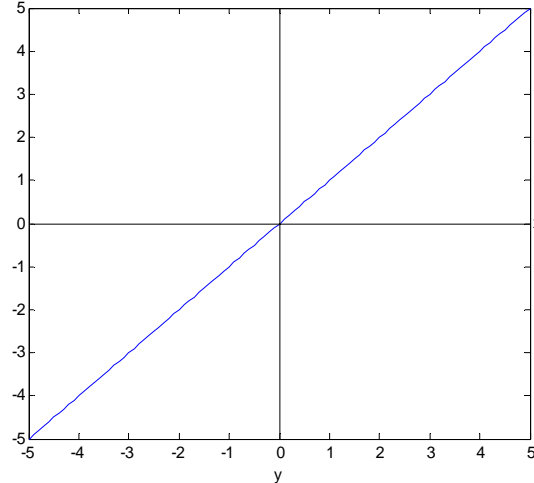
EX.2 $f(x) = -(x + 4)^2 - 3$



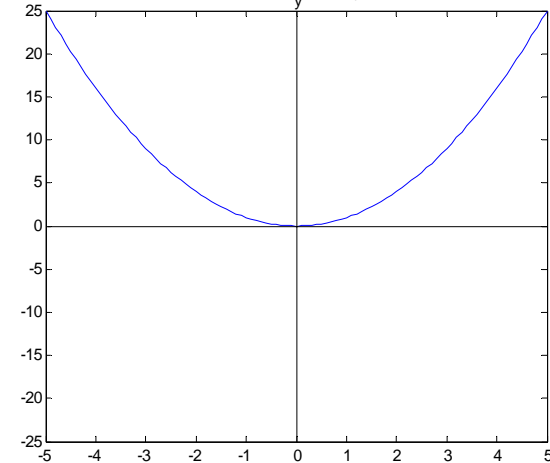
Constant Function ($y = c$)



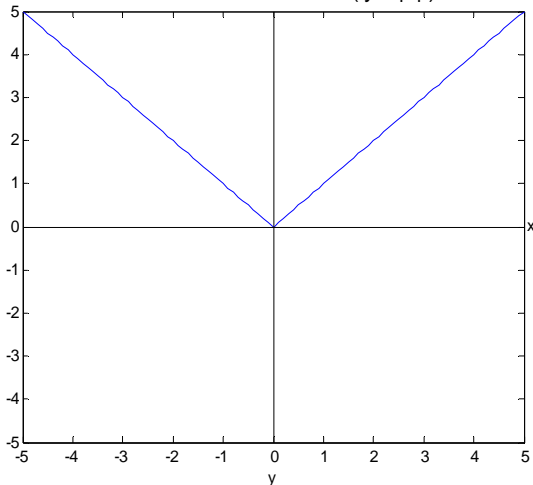
Linear Function ($y = x$)



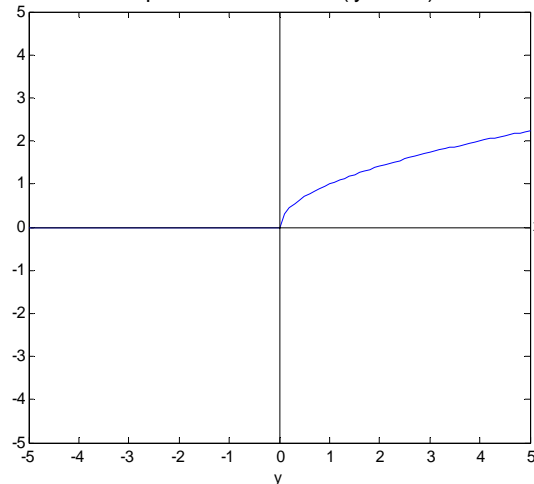
Square Function ($y = x^2$)



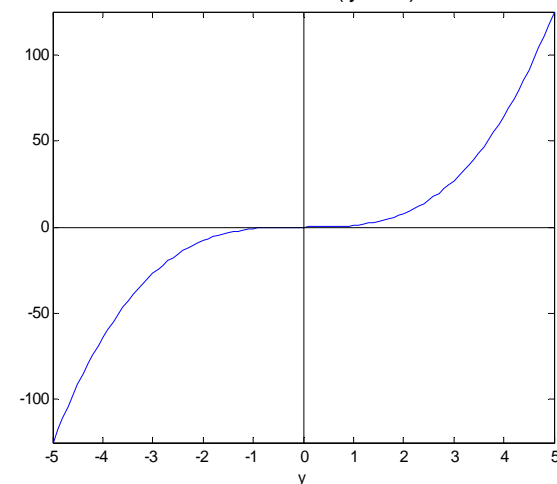
Absolute Value Function ($y = |x|$)



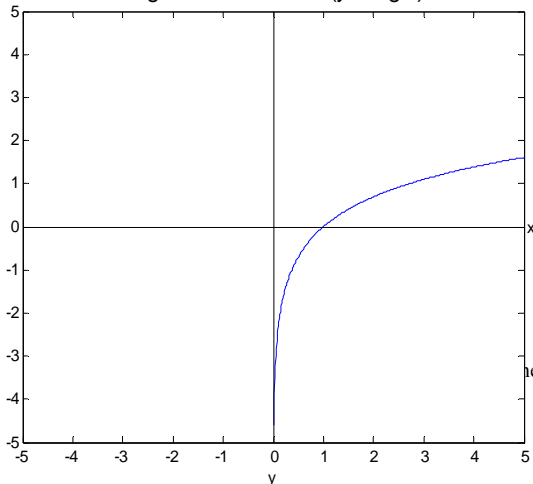
Square Root Function ($y = x^{1/2}$)



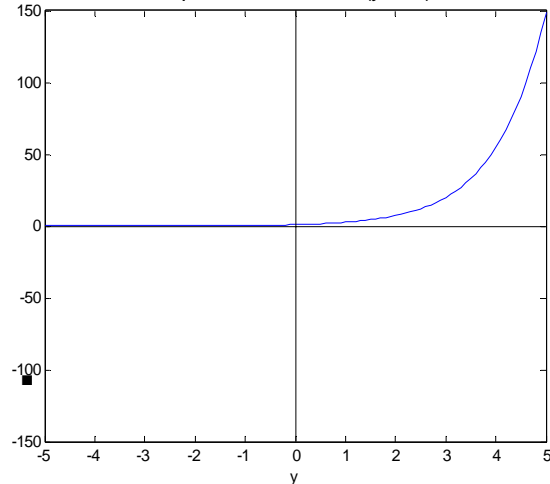
Cube Function ($y = x^3$)



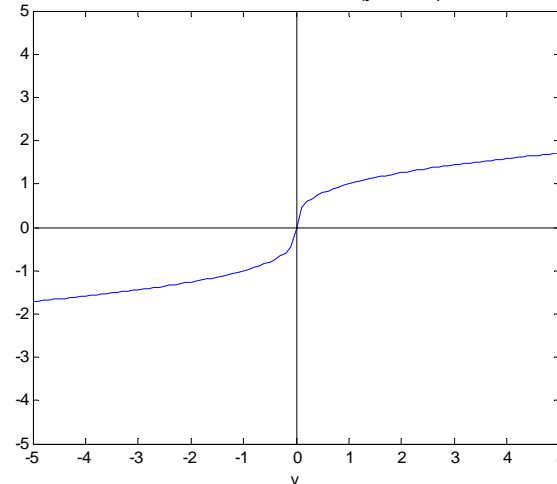
Logarithmic Function ($y = \log x$)



Exponential Function ($y = a^x$)



Cube Root Function ($y = x^{1/3}$)



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