ELEMENTARY FUNCTIONS AND THEIR GRAPHS

ADRIAN PĂCURAR

Linear Functions

a. Slope-intercept form $y = mx + b$ where m is the slope, b is the y-intercept

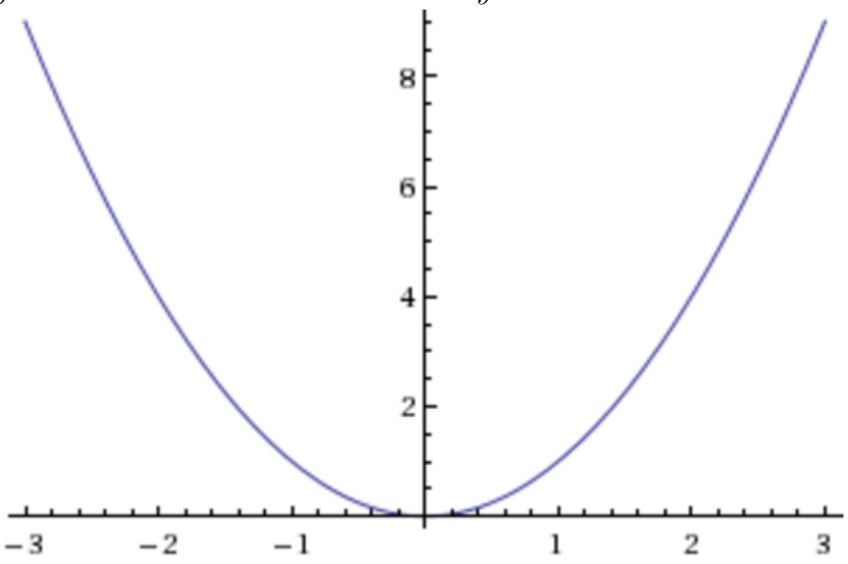
$y = 2x - 4$ $\qquad$ $y = -x + 3$ $\qquad$ $y = \frac{1}{2}x - 3$

b. Point-slope form $y - y_0 = m(x - x_0)$ where (x_0, y_0) is a given point on the graph

$(0, 0)$, slp 1 $\qquad$ $(1, 2)$ slp -2 $\qquad$ $(-1, 1)$ slp -1

Parabolas/Quadratics

a. $y = x^2$ $y = 2x^2$ $y = x^2/2$



b. $y = x^2 - 2$ $y = (x-2)^2$ $y = (x+1)^2 - 3$

Power Functions

$y = x^3$ $y = x^4$ $y = x^5$

Rational Functions

$y = \dfrac{1}{x}$ $y = \dfrac{1}{x^2}$ $y = \dfrac{1}{x^3}$ $y = \dfrac{1}{x^4}$

n-th Roots

$y = \sqrt{x}$ $y = \sqrt[3]{x}$ $y = \sqrt[4]{x}$ $y = \sqrt[5]{x}$

Exponential a^x

$y = e^x$ $y = e^{-x}$ $y = 2e^x$ $y = e^x + 1$

Logarithmic $\log(x)$

$y = \ln(x)$ $y = \ln(2x)$

Trigonometric Functions

$y = \sin x$ $y = 2\sin x$ $y = \sin(x+1)$

$y = \cos x$ $y = \cos(x-\frac{\pi}{2})$ $y = \cos(x+\frac{\pi}{2})$

$y = \tan x$ $y = \cot x = \frac{1}{\tan x}$

$y = \csc x = \frac{1}{\sin x}$ $y = \sec x = \frac{1}{\cos x}$