

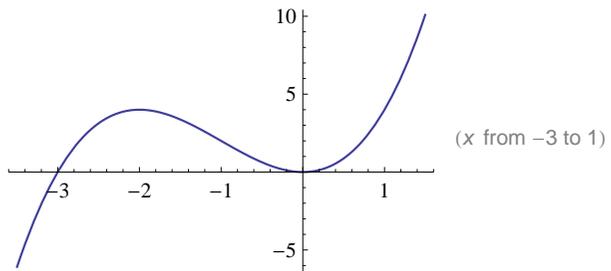
$$y = x^3 + 3x^2$$



Input:

$$y = x^3 + 3x^2$$

Plots:



Alternate form:

$$y = x^2(x + 3)$$

Implicit derivatives:

$$\frac{\partial x(y)}{\partial y} = \frac{1}{6x + 3x^2}$$

Local maximum:

$$\max\{y = x^3 + 3x^2\} = 4 \text{ at } x = -2$$

Wolfram|Alpha:  $y = x^3 + 3x^2$

Local minimum:

$$\min\{y = x^3 + 3x^2\} = 0 \text{ at } x = 0$$