

# Derivative of a Function.notebook

## The Power Rule

ex. 1 State the derivative of:

a)  $10x$   
 $10$

b)  $6x^3 - 4x^2 + 5x$   
 $18x^2 - 8x + 5$

c)  $27$   
 $0$

$27x^0$

d)  $\frac{1}{x^3}$   
 $x^{-3}$   
 $-3x^{-4}$  or  $-\frac{3}{x^4}$

e)  $\frac{5x^3 + x^2}{x}$   
 ~~$\frac{x(5x^2 + x)}{x}$~~   
 $5x^2 + x$   
 $10x + 1$

or if given notation

$$f(x) = 5x^2 + x$$

$$f'(x) = 10x + 1$$

$$\frac{d}{dx} \left( \frac{5x^3 + x^2}{x} \right) = 10x + 1$$