

## SIMPLE DERIVATIVE RULES

### function

### derivative formula

#### I. Constant

$$y = f(x) = \text{constant}$$

$$y' = f'(x) = 0$$

Recall: derivative is slope and slope of a horizontal line ( $y = \text{const}$ ) is 0.

#### II. Power Rule

$$y = f(x) = x^n, \quad (n \in \mathbb{R})$$

$$y' = f'(x) = n x^{n-1}$$

#### III. Constant Times a Function Rule

$$y = f(x) = k \cdot g(x)$$

$$y' = f'(x) = k [g'(x)]$$

#### IV. Sum and Difference Rule

$$y = f(x) = g(x) \pm h(x)$$

$$y' = f'(x) = g'(x) \pm h'(x)$$