

# Calculus 1: Chapter 3

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## 3.1

### Differential Rule:

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#### *Differential Formulas:*

- $\frac{d}{dx}(c) = 0$
- $\frac{d}{dx}(x) = 1$
- $\frac{d}{dx}(x^n) = n \cdot x^{n-1}$
- $\frac{d}{dx}[c \cdot f(x)] = c \cdot \frac{d}{dx}[f(x)]$
- $\frac{d}{dx}[f(x) \pm g(x)] = \frac{d}{dx}f(x) \pm \frac{d}{dx}g(x)$

#### **Example 0.0.1**

Differentiate the following functions:

1.)  $f(t) = \frac{1}{2}t^6 - 3t^4 + 1$