

$$1. (cf)' = cf'(x)$$

$$2. (f \pm g)' = f'(x) \pm g'(x)$$

$$3. (fg)' = f'g + fg' - \text{Product Rule}$$

$$4. \left(\frac{f}{g}\right)' = \frac{f'g - fg'}{g^2} - \text{Quotient Rule}$$

$$5. \frac{d}{dx}(c) = 0$$

$$6. \frac{d}{dx}(x^n) = nx^{n-1} - \text{Power Rule}$$

$$7. \frac{d}{dx}(f(g(x))) = f'(g(x))g'(x)$$

This is the **Chain Rule**