Derivatives

$$\frac{d(cu)}{dx} = c\frac{du}{dx} \tag{1}$$

$$\frac{d(u + c)}{dx} = \frac{du}{dx} + \frac{dv}{dx} \tag{2}$$

$$\frac{d(uv)}{dx} = u\frac{dv}{dx} + \frac{du}{dx} \tag{3}$$

$$\frac{d(u^n)}{dx} = nu^{n-1}\frac{du}{dx} \tag{4}$$

$$\frac{d(u/v)}{dx} = \frac{v\left(\frac{du}{dx}\right) - u\left(\frac{dv}{dx}\right)}{v^2} \tag{5}$$

$$\frac{d(e^{cu})}{dx} = ce^{cu}\frac{du}{dx} \tag{6}$$

$$\frac{d(c^u)}{dx} = (\ln c)c^u\frac{du}{dx} \tag{7}$$

$$\frac{d(lnu)}{dx} = \frac{1}{u}\frac{du}{dx} \tag{8}$$