

- Exponential Growth $y = A \cdot b^{kt}$, $k > 0$
- Exponential Decay $y = A \cdot b^{-kt}$, $k > 0$
- Compound Interest Formulas:

$$F = P(1+i)^n$$

$$F = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$F = P e^{rt}, \text{ continuous interest}$$

- Logarithmic Differentiation:

$$f(x) = \text{RHS}(x)$$

, Right Hand Side
is function of x

$$\ln f(x) = \ln [\text{RHS}(x)] \text{ use log properties to simplify next steps.}$$

$$\frac{d}{dx} f(x) = \frac{d}{dx} \ln [\text{RHS}(x)] \text{ , differentiate both sides}$$

$$\frac{f'(x)}{f(x)} = \text{derivatives of RHS}$$

$$f'(x) = f(x) \cdot [\text{derivatives of RHS}]$$

Now Give examples of all the above.