

1- $\frac{1}{x^2} = x^{-2}$ $\frac{d}{dx} x^{-2} = -2x^{-3} = -\frac{2}{x^3}$

2- $\frac{d}{dx} \ln x = \frac{1}{x}$

1. $\frac{d}{dx} x^n = nx^{n-1}$ $\frac{d}{dx} x^3 = 3x^2$ $\frac{d}{dx} x^{-1} = -x^{-2} = -\frac{1}{x^2}$

2. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln \frac{1}{x} = \frac{d}{dx} \ln x^{-1} = -x^{-2} = -\frac{1}{x^2}$

3. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln x^2 = \frac{1}{x^2} \cdot 2x = \frac{2}{x}$

4. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln \frac{1}{x^2} = \frac{d}{dx} \ln x^{-2} = -2x^{-3} = -\frac{2}{x^3}$

5. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln \frac{1}{x^3} = \frac{d}{dx} \ln x^{-3} = -3x^{-4} = -\frac{3}{x^4}$

6. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln \frac{1}{x^4} = \frac{d}{dx} \ln x^{-4} = -4x^{-5} = -\frac{4}{x^5}$

7. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln \frac{1}{x^5} = \frac{d}{dx} \ln x^{-5} = -5x^{-6} = -\frac{5}{x^6}$

8. $\frac{d}{dx} \ln x = \frac{1}{x}$ $\frac{d}{dx} \ln \frac{1}{x^6} = \frac{d}{dx} \ln x^{-6} = -6x^{-7} = -\frac{6}{x^7}$



