Derivatives

14. Derivatives

1) $\frac{d}{dx}(x) = 1$

2) $\frac{d}{dx}(x^n) = nx^{n-1}$

3) $\frac{d}{dx}(\sin x) = \cos x$

4) $\frac{d}{dx}(\cos x) = -\sin x$

5) $\frac{d}{dx}(\tan x) = sec^2 x$

6) $\frac{d}{dx}(\sec x) = \sec x \tan x$

7) $\frac{d}{dx}(cosec\ x) = -cosec\ x \cot x$

8) $\frac{d}{dx}(\cot x) = -cosec^2 x$

9) $\frac{d}{dx}(\log x) = \frac{1}{x}$

10) $\frac{d}{dx}(e^x) = e^x$

11) $\frac{d}{dx}(a^x) = a^x \log a$

12) $\frac{d}{dx}(\sqrt{x}) = \frac{1}{2\sqrt{x}}$

13) $\frac{d}{dx}\left(\frac{1}{x}\right) = \frac{-1}{x^2}$

14) $\frac{d}{dx}(\sin^{-1} x) = \frac{1}{\sqrt{1-x^2}}$

15) $\frac{d}{dx}(\cos^{-1} x) = \frac{-1}{\sqrt{1-x^2}}$

16) $\frac{d}{dx}(\tan^{-1} x) = \frac{1}{1+x^2}$

17) $\frac{d}{dx}(\cot^{-1} x) = \frac{-1}{1+x^2}$

18) $\frac{d}{dx}(\sec^{-1} x) = \frac{1}{x\sqrt{x^2-1}}$

19) $\frac{d}{dx}(cosec^{-1} x) = \frac{-1}{x\sqrt{x^2-1}}$

20) Product Rule

$$\frac{d}{dx}(u \cdot v) = u\frac{d}{dx}v + v\frac{d}{dx}u$$

21) Quotient Rule

$$\frac{d}{dx}\left(\frac{u}{v}\right) = \frac{v\frac{d}{dx}u - u\frac{d}{dx}v}{v^2}$$

Solutions on Open Mind Guruji Subscribe For More Updates