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Matric No: 19/sci01080

$$1) \quad y = \tan^{-1} 3x^4$$

$$y = \frac{3x^4}{\tan}$$

$$\frac{dy}{dx} = \frac{12x^3}{1+9x^8}$$

$$\tan y = 3x^4$$

$$\sec^2 y \frac{dy}{dx} = 12x^3$$

$$\sec y = \frac{1}{\cos y}$$

$$\cos y = \frac{1}{\sqrt{1+9x^8}}$$

$$\sec y = \sqrt{1+9x^8}$$

$$\sec y = 1+9x^8$$

$$\frac{dy}{dx} = \frac{12x^3}{\sec^2 y}$$

$$2) \quad u = \sin^{-1} 3k$$

$$y = \sin^{-1} 3k$$

$$y = \frac{3k}{\sin}$$

$$3k = \sin y$$

$$\frac{dx}{dy} = \frac{3x}{\cos y}$$

$$dy = \frac{\cos y}{3x}$$

OLAMIDE & ADEDAMOLA

Sat. 26th Dec., 2020

Courtesy: Groom's Parent



$$\cos y = \frac{\sqrt{1-9k^2}}{1}$$

$$\frac{dy}{dx} = \frac{3}{\sqrt{1-9k^2}}$$

3.) $\sin^{-1} x^2$

$$y = \frac{x^2}{\sin}$$

$$x^2 = \sin y$$

$$\cos y = \sqrt{1-x^2}$$

$$\frac{dy}{dx} = \frac{2x}{\sqrt{1-x^2}}$$