

$$\text{iii } y = 3x^{3/2} + \frac{3}{x^2} - 6x$$

$$y = 3x^{3/2} + 3x^{-2} - 6x$$

$$\begin{aligned} \frac{dy}{dx} &= 3 \times \frac{3}{2} x^{1/2} + 3(-2)x^{-3} - 6 \\ &= \frac{9}{2} x^{1/2} - 6x^{-3} - 6 \end{aligned}$$

$$\text{iv. } y = \sec^3 4x$$

$$\text{So, } 3\sec^2(4x) \cdot \frac{d}{dx} \sec(4x)$$

$$\sec(4x) \rightarrow \sec(4x)(\tan(4x))$$

$$3\sec^2(4x) \cdot \sec(4x)\tan(4x) \cdot \frac{d}{dx} 4x$$

So,

$$\text{So, } 3\tan(4x)\sec^3(4x) \times 4 \cdot \frac{d}{dx} x$$

$$12\tan(4x)\sec^3(4x)$$

$$= 12\sec^3(4x)\tan(4x)$$