

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

$$\frac{dy}{dx} = \frac{9}{2}x^{\frac{1}{2}} - 6x^{-3} - 6$$

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

$$\frac{dy}{dx} = \cancel{\sec} 3\sec^2(4x)$$

$$\text{v)} \quad y = (x + \sin 2x)$$

$$\frac{dy}{dx} = 1 + 2\cos 2x$$

$$\text{vi)} \quad y = \frac{1-10x}{(2x-1)^2}$$

$$u = 1-10x$$

$$v = (2x-1)^2$$

$$\frac{du}{dx} = -10$$

$$\begin{aligned} \frac{dv}{dx} &= 2(2x-1)(2) \\ &= 4(2x-1) \end{aligned}$$

$$\frac{dy}{dx} = \frac{(2x-1)^2(-10) - (1-10x)4(2x-1)}{(2x-1)^4}$$