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(2)

iv) $y = \sec^3 4x$

$$\begin{aligned} y' &= 3 \sec^2 4x \cdot \frac{d}{dx} \sec 4x && \text{chain rule} \\ &= 3 \sec^2 4x \cdot (\sec 4x \tan 4x \cdot 4) \\ &= \underline{\underline{12 \sec^3 4x \tan 4x}} \end{aligned}$$

v) $y = (x + \sin 2x)$

$$y' = \frac{d}{dx} x + \frac{d}{dx} \sin 2x \quad \text{Sum rule}$$

$$y' = \underline{\underline{1 + 2 \cos 2x}}$$

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

$$f = 1-10x \quad \frac{df}{dx} = -10$$

$$\begin{aligned} g &= (2x-1)^2 \quad \frac{dg}{dx} = 8x+4 \\ &= 4x^2 + 4x + 1 \end{aligned}$$

$$y' = \frac{-10(2x-1)^2 - (1-10x)(8x+4)}{((2x-1)^2)^2}$$

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