

05/05/2022

ACHA4006

2005245

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Question 1

$$i) y = 5x^4 + 5x^2 + 3x - 19$$

$$y = \frac{dy}{dx} (5x^4 + 5x^2 + 3x - 19)$$

$$y = \frac{dy}{dx} (5x^4) + \frac{dy}{dx} (5x^2) + \frac{dy}{dx} (3x) - \frac{dy}{dx} (19)$$

$$y = 5 \times 4x^3 + 5 \times 2x + 3 - 0$$

$$\frac{dy}{dx} = 20x^3 + 10x + 3$$

$$ii) y = (2x+5)(x-1)$$

$$y = (2x+5)(1) + (x-1)(2)$$

$$y = 4x + 3$$

$$\frac{dy}{dx} = 4x + 3$$

$$iii) y = \frac{1}{x^6} - \cos 5x$$

$$y = x^{-6} - \cos 5x$$

$$\frac{dy}{dx} = -5x^{-7} - 5\cos 5x$$