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Engineering Maths Exam
ACMA4006

Question 1

a) i) $y = 8x^3 - 2x^2 - x + 1$

$$\frac{dy}{dx} = 8(3x^2) - 2(2x) - 1$$

$$\frac{dy}{dx} = 24x^2 - 4x - 1$$

ii) $y = -3(x-5)^2$

$$y = -3(x^2 - 10x + 10)$$

$$y = -3x^2 + 30x - 30$$

$$\frac{dy}{dx} = -6x + 30$$

iii) $y = \frac{7}{x^3} + 4e^{3x}$

$$y = 7x^{-3} + 4(e^{3x})$$

$$\frac{dy}{dx} = -21x^{-4} + 12e^{3x}$$