

Question 1

(8 marks)

(a) For the functions below, determine $\frac{dy}{dx}$. You do not need to simplify your answers.

(i) $y = 3 \cos(2 + 7x)$.

(2 marks)

$$(ii) \quad y = \frac{5x+2}{x\sqrt{x}}.$$

(3 marks)

(b) Evaluate the following integral:

$$\int \frac{2x^2 + x - 1}{x} dx.$$



(3 marks)