

**Question 4****(7 marks)**

Determine the following:

(a)  $\int (2x^2 - x^3) dx$

(2 marks)

(b)  $\int_0^{\frac{\pi}{2}} \frac{\sin(x)}{3 - \cos(x)} dx$

(3 marks)

(c)  $\frac{d}{dy} \int_{-1}^y 3x^2 \cos(2x) dx$

(2 marks)