Question 3 **(5 marks)**

(a)   Given that $\dfrac{2x^2 + 5x + 6}{x^2(x + 3)} = \dfrac{a}{x} + \dfrac{b}{x^2} + \dfrac{c}{x + 3}$, determine the values of a, b and c.

(2 marks)

(b)   Hence determine $\displaystyle\int \dfrac{2x^2 + 5x + 6}{x^2(x + 3)}\, dx$.

(3 marks)