Question 4 (6 marks)

(a)   Express $\dfrac{x-8}{(x+2)(x-3)}$ in the form $\dfrac{a}{x+2} + \dfrac{b}{x-3}$. (3 marks)

(b)   Hence determine $\displaystyle\int \dfrac{x-8}{(x+2)(x-3)}\,dx$. (3 marks)