

Question number	Scheme	Marks
1	$\alpha + \beta = \frac{3}{4}, \alpha\beta = -2$ Sum: $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{\frac{3}{4}}{-2} = -\frac{3}{8} = \left(-\frac{b}{a}\right)$ Product: $\frac{1}{\alpha} \times \frac{1}{\beta} = \frac{1}{\alpha\beta} = -\frac{1}{2} = \left(\frac{c}{a}\right)$ Equation: $x^2 + \frac{3}{8}x + \left(-\frac{1}{2}\right) = 0 \Rightarrow 8x^2 + 3x - 4 = 0$	B1B1 M1A1 B1ft M1A1ft [7]
Total 7 marks		

Mark	Notes
B1	For correct value for $\alpha + \beta$
B1	For correct value for $\alpha\beta$
M1	For the sum $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{\text{their } \frac{3}{4}}{\text{their } -2}$ Allow use of their stated $\alpha + \beta$ and $\alpha\beta$
A1	For the correct sum $-\frac{3}{8}$
B1ft	For the correct value of the product $\frac{1}{\alpha} \times \frac{1}{\beta} = \frac{1}{\alpha\beta} = -\frac{1}{2}$ FT their stated $\alpha + \beta$ and $\alpha\beta$
M1	For correctly forming an equation with their sum and product $x^2 - \frac{'-3'}{8}x + -\frac{'1'}{2} (= 0)$ Condone the absence of $=0$ for this mark.
A1ft	For the correct equation $8x^2 + 3x - 4 = 0$ oe Follow through from their sum and product. Must be integer coefficients and constant.