Question Number	Scheme	Marks
4		
(a)	$\alpha+\beta=-\frac{5}{2} \quad \alpha\beta=\frac{7}{2}$	B1
	$\alpha^3+\beta^3=(\alpha+\beta)^3-3\alpha\beta(\alpha+\beta)=\left(-\frac{5}{2}\right)^3-3\left(\frac{7}{2}\right)\left(-\frac{5}{2}\right)$	M1
	$=\frac{85}{8}$	A1 (3)
(b)	$\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}=\frac{\alpha^3+\beta^3}{\alpha\beta}=\ldots$	M1
	$=\left(\frac{85}{8}\right)\times\left(\frac{2}{7}\right)=\frac{85}{28}$	A1
	$\frac{\alpha^2}{\beta}\times\frac{\beta^2}{\alpha}=\alpha\beta=\frac{7}{2}$	B1ft
	$x^2-"\frac{85}{28}"x+"\frac{7}{2}" \ (=0)$	M1
	$28x^2-85x+98=0$	A1 (5) **[8]**

	Note: if a candidate solves the equation and uses the roots to answer the question, then send to review.
(a)	
B1	Both correct. (Seen anywhere in the working)
M1	Uses their sum and product of roots in a correct expression for $\alpha^3+\beta^3$.
A1	Correct value. Must be exact. Accept 10.625
(b)	
M1	substitutes their values for $\alpha^3+\beta^3$ and $\alpha\beta$ into $\frac{\alpha^3+\beta^3}{\alpha\beta}=\ldots$ (allow slips in substitution).
A1	Correct sum as a single fraction (may be seen or implied in their equation)
B1ft	Correct product or follow through their product
M1	Use x^2-sum of roots$\times x+$product of roots with their values for sum and product. "= 0" may be missing.
A1	A correct final equation as shown or any integer multiple of this. " = 0" must be included.