Question			Answer	Marks	AO	Guidance
6	(a)		$7\cos x\tan x+\dfrac{4\cos x}{\tan x}=7\cos x\left(\dfrac{\sin x}{\cos x}\right)+\dfrac{4\cos x}{\left(\dfrac{\sin x}{\cos x}\right)}$	M1	3.1a	Replace $\tan x$ with $\dfrac{\sin x}{\cos x}$ to obtain an expression in $\sin x$ and $\cos x$ only.
			$(=7\sin x+)\ \dfrac{4\cos^2 x}{\sin x}$ $(=7\sin x\ +)\ \dfrac{4(1-\sin^2 x)}{\sin x}$	M1	1.1	Replace $\cos^2 x$ with $1-\sin^2 x$ in the second term to obtain an expression in $\sin x$ only.
			$=7\sin x+\dfrac{4}{\sin x}-4\sin x=3\sin x+\dfrac{4}{\sin x}$	A1 [3]	2.1	**AG** Sufficient working must be shown. Completely accurate work for this mark. Withhold if poor notation seen eg $\sin x^2$.
6	(b)		$3\sin 2\theta+\frac{4}{\sin 2\theta}=-13$ $\Rightarrow 3\sin^2 2\theta+13\sin 2\theta+4\ (=0)$	M1*	3.1a	Use result from part **(a)** to obtain a 3TQ in $\sin 2\theta$ or $\sin x$ oe. The terms do not all have to be on one side for this mark. Allow $3y^2+13y+4(=0)$ oe.
			$(3\sin 2\theta+1)(\sin 2\theta+4)=0\Rightarrow\sin 2\theta=-\dfrac{1}{3}$	M1dep*	1.1	Obtain (at least) one equation of the form $\sin 2\theta=k$ or $\sin x=k$ or $y=k$ where $\lvert k\rvert<1$.
			$\theta=99.7^\circ$ or $\theta=170.3^\circ$	A1	1.1	awrt 99.7 or 99.8 - for reference: 99.735610… awrt 170.3 – for reference: 170.264389…
			$\theta=99.7^\circ$ and $\theta=170.3^\circ$	A1 [4]	1.1	Ignore additional answers outside the given range. **A0** for additional answers within the range.