Mixed Exercise 7.01 - Trigonometry (Year 2 Pure Maths)

1 (a) By writing 3θ as $2\theta + \theta$, show that $\cos 3\theta = 4\cos^3\theta - 3\cos\theta$. (4 marks)

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(b) Hence prove that $\dfrac{\cos 3\theta}{\cos\theta} - \dfrac{\cos 6\theta}{\cos 2\theta} = 2(\cos 2\theta - \cos 4\theta)$ (5 marks)

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2 *Given that α and β are acute angles such that $Sin\ \alpha = \frac{2}{\sqrt{13}}$ and $Sin\ \beta = \frac{1}{\sqrt{5}}$,*

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find without using a calculator the exact value of $Sin(\alpha + \beta)$. *(6 marks)*

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