

3(a)	Solve $2x - 3 = 5x + 2$ to obtain $-\frac{5}{3}$
	Attempt solution of linear equation where $2x$ and $5x$ have different signs
	Obtain $\frac{1}{7}$
	Alternative Method for Question 3(a)
	State or imply non-modulus equation $(2x - 3)^2 = (5x + 2)^2$
	Attempt complete solution of three-term quadratic equation
	Obtain $-\frac{5}{3}$ and $\frac{1}{7}$ or equivalents
3(b)	State or imply $\cos \theta = -\frac{3}{5}$
	Attempt correct process for finding third quadrant angle
	Obtain 4.07
4	Attempt to express equation in terms of $\tan \theta$ only
	Obtain $\frac{1}{\tan \theta} \times \frac{\tan \theta + \tan 45}{1 - \tan \theta \tan 45} = 7$
	Simplify to obtain equation $7 \tan^2 \theta - 6 \tan \theta + 1 = 0$
	Attempt solution of three-term quadratic equation in $\tan \theta$ to obtain at least one value of θ
	Obtain $\tan \theta = \frac{1}{7}(3 \pm \sqrt{2})$ or equivalent and hence 12.8 and 32.2, and no others in the given range

2	Attempt identity involving $\tan^2 \theta$ and $\sec^2 \theta$ to obtain quadratic equation in $\sec \theta$ or $\cos \theta$
	Obtain $2\sec^2 \theta + 3\sec \theta - 20 = 0$ or $20\cos^2 \theta - 3\cos \theta - 2 = 0$
	Solve three-term quadratic equation to obtain at least one value of θ
	Obtain at least two values of ± 66.4 and ± 104.5
	Obtain all four values and no others between -180 and 180

7(a)	Use correct identities to express in terms of $\sin x$ and $\cos x$
	Obtain $4\sin^2 x \cos^2 x + 4\cos^2 x(\cos^2 x - \sin^2 x)$
	Confirm $4\cos^4 x$
7(b)	Use identity from part (a) to obtain $k < 5$ or $k > 9$
	Obtain $k < 5$, $k > 9$
7(c)	State or imply integrand is $2\cos^2 \frac{1}{2}t$ or $\sqrt{4\cos^4 \frac{t}{2}}$
	Use double-angle identity to express in terms of $\cos t$
	Obtain $1 + \cos t$ and integrate to obtain $t + \sin t$
	Use limits to obtain $\frac{2}{3}\pi + \sqrt{3}$

7(a)	Expand to obtain the form $k_1 \cos \theta \sin \theta + k_2 \cos^2 \theta$
	Obtain $2\sqrt{3} \cos \theta \sin \theta + 2 \cos^2 \theta$ with exact coefficients
	Obtain $\sqrt{3} \sin 2\theta + \cos 2\theta + 1$
	State $R = 2$
	Use appropriate trigonometry to find value of α
	Conclude $2 \cos(2\theta - 60) + 1$
7(b)	Attempt to express equation in form $\cos(4\phi - \alpha) = k$
	Use correct process to find one value of ϕ
	Obtain $\cos(4\phi - 60) = \frac{1}{3}$ and hence 32.6
	Use correct process to find second value of ϕ
	Obtain 87.4 and no others between 0 and 90