Question	Scheme	Marks
1	$\int 10x^5+6x^3-\frac{3}{x^2}\,\mathrm{d}x=10\times\frac{x^6}{6}+6\times\frac{x^4}{4}-3\times\frac{x^{-1}}{-1}(+c).$	**M1 A1**
	$=\frac{5x^6}{3}+\frac{3x^4}{2}+\frac{3}{x}+c$	**A1A1**
		(4)
		(4 marks)
Notes:		

M1: For raising any power by 1, e.g. $x^5\rightarrow..x^6$, $x^3\rightarrow..x^4$ or $x^{-2}\rightarrow..x^{-1}$.

Accept unprocessed indices such as x^{5+1} etc

A1: For two of the three terms in x correctly integrated (but may be left unsimplified). See below

Accept for this mark terms like $10\times\frac{x^6}{6}$ and $-3\times\frac{x^{-1}}{-1}$

This may be implied by a correct simplified answer.

Do NOT accept for this mark "unprocessed terms" such as $10\times\frac{x^{5+1}}{5+1}$

A1: For two correct and simplified terms in x all on one line.

Accept for this mark equivalent terms such as $3x^{-1}$ for $\frac{3}{x}$ and $1.5x^4$ for $\frac{3x^4}{2}$

Do NOT accept for this mark terms like $-3\times\frac{x^{-1}}{-1}$ and $1.67x^6$

A1: Fully correct and simplified with $+c$ all on one line.

Accept simplified equivalents, e.g. $3x^{-1}$ for $\frac{3}{x}$.

Do NOT accept with spurious symbols like $\left(\frac{5x^6}{3}+\frac{3x^4}{2}+\frac{3}{x}+c\right)\mathrm{d}x$ or $\int\left(\frac{5x^6}{3}+\frac{3x^4}{2}+\frac{3}{x}+c\right)$

Do NOT allow if they then go on and multiply to get rid of fractions

Question	Scheme	Marks
2(a)	$AB = 21\,\text{cm}, BC = 13\,\text{cm}, \angle BAC = 25°, \angle ACB = x°$	
	$\frac{\sin x°}{21} = \frac{\sin 25°}{13}$ o.e	**M1**
	$\sin x° = 0.6827$ (awrt)	**A1**
		(2)
(b)	$\sin^{-1}(0.6827) = ...(43.05°)$	**M1**
	($AC < AB$ so $\angle ABC < \angle ACB$ so) required angle is $180° - \sin^{-1}(0.6827) = ...$	**M1**
	So x = awrt 136.95	**A1**
		(3)
		(5 marks)
Notes:		
Condone the omission of the ° symbol. Mark (a) and (b) as one		

(a)

M1: A correct statement of the sine rule with sides and angles in the correct position.

Implied by $\sin x° =$ awrt 0.68

A1: sin x ° = awrt 0.6827

ISW for instance if they go on to find the value of x in (a)

(b)

M1: Applies inverse sine to their value found in part (a) to find the angle in degrees (using degree mode) correct to nearest degree. For a correct (a) awrt 43° is sufficient

Implied by a correct answer for their value of sin x, either for the acute or the obtuse angle..

M1: Attempts to find the correct angle, $180° - \arcsin"0.6827"°$. Award even if other angles are given

No reasoning need be given, but may see diagram drawn, size of angles, or comparison of sides used.

A1: awrt 136.95 but it is A0 if two angles are given

.....

There are alternative methods so look at the candidates work carefully.

E.g.

Uses the cosine rule once to find AC

$$13^2 = 21^2 + y^2 - 2\times 21\times y\cos 25$$

$$y^2 - 38.1..y + 272 = 0$$

$$y = 9.533...$$

...and then a second time to find x

$$\cos x = \frac{13^2 + 9.533^2 - 21^2}{2\times 13\times 9.533} \Rightarrow x = 136.95°$$

In this solution both M's in part (b) are scored together.

To score marks in (a) (even though they haven't used the sine rule) they would need to simply find sin (their 136.95) for M1, and A1 for an accurate answer.