Question	Scheme	Marks	AOs
15(a)	$y = \arccos\frac{1}{2}x \Rightarrow \cos y = \frac{1}{2}x \Rightarrow x = 2\cos y$ $y = \arcsin x \Rightarrow \sin y = x$	M1	1.1b
	$\sin y = 2\cos y \Rightarrow \tan y = 2*$ or $\sin y = x,\ 2\cos y = x \Rightarrow \tan y = \frac{x}{x/2} = 2*$	A1*	2.1
			(2)
(b)	$\tan y = 2 \Rightarrow x = \sin y = \frac{2}{\sqrt{5}}$ or $\tan y = 2 \Rightarrow x = 2\cos y = \frac{2}{\sqrt{5}}$ or $\tan y = 2 \Rightarrow \tan^2 y = 4 \Rightarrow \sec^2 y = 5 \Rightarrow \cos y = \frac{1}{\sqrt{5}} \Rightarrow x = \frac{2}{\sqrt{5}}$ or $\tan y = 2 \Rightarrow \cot^2 y = \frac{1}{4} \Rightarrow \text{cosec}^2 y = \frac{5}{4} \Rightarrow \sin y = \frac{2}{\sqrt{5}} = x$	M1 A1	3.1a 2.2a
			(2)
			(4 marks)

Notes

(a)

M1: Uses inverse trigonometric functions to express x in terms of $\cos y$ and x in terms of $\sin y$

A1*: Sets the x's equal and rearranges to the given answer or uses $\sin y$ and $\cos y$ in terms of x and applies $\tan y = \frac{\sin y}{\cos y}$ to obtain the given answer.

(b)

M1: Uses Pythagoras directly or trigonometric identities to establish the value of x

A1: Correct exact value (accept any exact equivalent e.g. $\frac{2\sqrt{5}}{5}$)