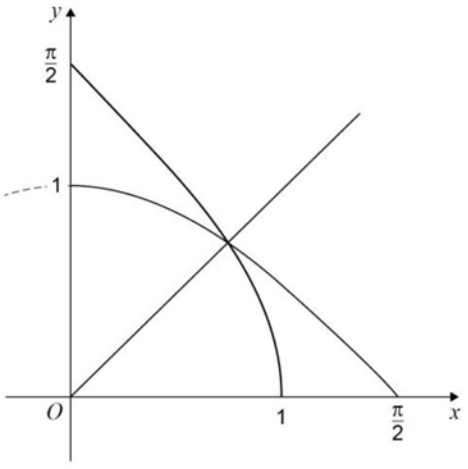
Q	Marking instructions	AO	Marks	Typical solution
13(a)	States 1	1.2	B1	1
	Subtotal		**1**	

Q	Marking instructions	AO	Marks	Typical solution
13(b)(i)	Draws a concave arc for $0 \leq x \leq \frac{\pi}{2}$ Must intersect y-axis below $\frac{\pi}{2}$ Condone dotted section	1.1a	M1	
	Labels the y-intercept of their concave arc 1 or a.	1.1b	A1	
	Draws straight line through O at approximately $45°$ crossing the given curve $y = \arccos x$	1.1b	M1	
	Shows all three graphs intersecting at a common point with the maximum of the cosine graph in the correct position and $y = x$ shown as a straight line through O.	2.2a	A1	
	Subtotal		**4**	

Q	Marking instructions	AO	Marks	Typical solution
13(b)(ii)	Explains that $y = \cos x$ and $y = \arccos x$ are reflections in $y = x$ Accept $y = x$ is a line of symmetry. Accept all **three** graphs meet at the same point. Or Starts with $x = \cos x$ and obtains $\arccos x = x$ Accept $\cos^{-1} x$ for $\arccos x$ throughout.	2.4	E1	All three graphs intersect at the same point.
	Subtotal		**1**	

Q	Marking instructions	AO	Marks	Typical solution
13(c)	Obtains $1+\sin x$ PI by $x_2 = 0.75036...$ AWRT 0.75	1.1b	B1	$x_{n+1} = x_n - \dfrac{x_n - \cos x_n}{1+\sin x_n}$ $x_3 = 0.7391$
	Obtains $x_n - \dfrac{x_n - \cos x_n}{1 \pm \sin x_n}$ Ignore subscripts, condone ANS for x_n PI by $x_2 = 0.75036...$ AWRT 0.75	1.1a	M1	
	Obtains AWRT $x_3 = 0.7391$ condone missing label provided this is their final answer. Must have scored M1.	1.1b	A1	
	Subtotal		**3**	

	Question 13 Total		**9**	