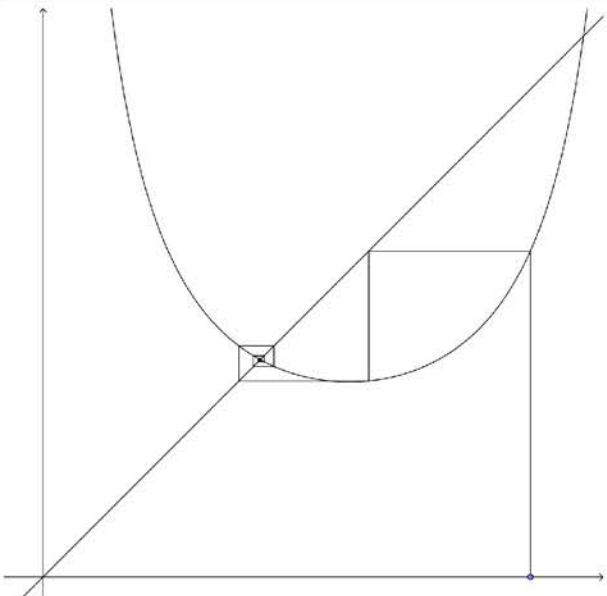


Question			Answer	Marks	AOs	Guidance	
5	(a)	(i)	$x = 0$ $x = \pi$	B1 B1 [2]	1.1 1.1	180 gets 0	If answers given in both degrees and radians follow inst 2g
5	(a)	(ii)	$(\frac{\pi}{2}, 1)$	B1 [1]	2.2a	(90, 1) or (1.57, 1) get 0	
5	(b)		$1 - \operatorname{cosec} 1 = -0.188\dots$ or 'negative' $2 - \operatorname{cosec} 2 = 0.900$ or 'positive' Change of sign so root between 1 and 2	B1 E1 [2]	1.1a 2.4	Both correct Condone no mention of continuity AG	OE E,g, may use $\operatorname{cosec} x - x$ Dep on B mark
5	(c)	(i)	BC 1.18840..., 1.07785...	B1 [1]	1.1a	Both correct to at least 3dp.	
5	(c)	(ii)	BC 1.114	B1 [1]	2.2a		
5	(d)		No, it converges to 1.114	E1 [1]	1.1	OR same as <i>their</i> (c) (ii) or 'the root between 1 and 2' etc	Just 'No' gets 0 'Yes' with anything gets 0

Question			Answer	Marks	AOs	Guidance	
5	(a)	(i)	$x = 0$	B1	1.1	If answers given in both degrees and radians follow inst 2g	
5	(e)			<p>B1</p> <p>B1</p> <p>B1</p> <p>[3]</p>	<p>3.2a</p> <p>2.2a</p> <p>1.1</p>	<p>Starting point between min and right asymptote</p> <p>Initial “staircase” (≥ 2 horiz sections)</p> <p>Spirals into lower root</p>	3 B marks all independent)