Question Number	Scheme	Marks
8		
(a)	$5\sin\theta = 1$	
	$\sin\theta = \frac{1}{5}$ $\theta = 0.201,$ 2.94	M1A1A1 (3)
(b)	$\tan\left(2\theta + \frac{\pi}{3}\right) = 0.4$	
	$2\theta + \frac{\pi}{3} = (0.3805...),$ 3.522..., 6.663...	M1
	$\theta = 1.24,\ 2.81$	M1depA1A1 (4)
(c)	$4\left(1-\cos^2\theta\right) - 7\cos\theta = 2$	M1
	$4\cos^2\theta + 7\cos\theta - 2 = 0$	
	$(4\cos\theta - 1)(\cos\theta + 2) = 0$	A1
	$\cos\theta = 0.25$	M1dep
	$\theta = 1.32$	A1 (4) [11]
9		
(a)	$S_n = n(2n+3)$	
	$n=1$ $S_n = a = 1\times(2+3) = 5$ *	M1A1 (2)
(b)	$S_2 = 2(4+3) = 14$	M1A1
	$14 = 5 + (5+d)$ $d = 4$	A1 (3)
(c)	12th term = $a + 11d = 5 + 11\times 4 = 49$	M1A1 (2)
(d)	$S_{p+4} + 1 = 2S_p$	
	$(p+4)(2p+8+3) + 1 = 2p(2p+3)$	M1
	$2p^2 + 19p + 45 = 4p^2 + 6p$	
	$2p^2 - 13p - 45 = 0$	A1
	$(2p+5)(p-9) = 0$	M1dep
	$p = 9$	A1 (4) [11]