Question 7

2010 HSC Mathematics

	-1-	Sample 3
Start here for Question Number: 7	a.i. 5 = 4 cos 2+	
	& = 2 sin 2t tC	
	at +=0, x = 1	
	1 = 6	
	z= 25/n2++1	
1 C N	frest v=0	
0 = 2	inzt rl	
sin 2	$r = \frac{-1}{2}$	
2+	= 71'	
	$= \frac{7\pi}{12}$ s	
	12 5	
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	at 1=0	
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b.j. dy = 2× : · q f x = -1 m= -2 Tangent: y - 1 = -2(x+1)y - 1 = -2x - 22x+y+1=0 11. m(a5) = 4-1 2+1 -1 91- m=1 x= t タレンニシュ Y= 4 :. ($\begin{pmatrix} 1 \\ 2 \\ 4 \end{pmatrix}$ $M: \begin{pmatrix} 2-1 \\ -2 \end{pmatrix}, \begin{pmatrix} 4 \\ -2 \end{pmatrix}$ $M\left(\frac{1}{2},\frac{5}{2}\right)$ - Mand & have same & values MC is vertical. Additional writing space on back page.

Office Use Only - Do NOT write anything, or make any marke below this line

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111. M(: x: -> 22+9+1 y=0 $t(\frac{1}{2},0)$ MBT = 4 2-1 = 8 3 y-4= = {(x-2) 3y-12 = 8x-16 8x - 3y - 4 = 0If tungent BT: 9x-3x2-4=0 has one solution. one solution if A=0 A=64-41-36+2 3x2-8x+4=6 D = 64 - 4(37(4))You may ask for an extra Writing Booklet if you need more space to answer question 7.