Question 5	2010 H3C   Mia	ithematics	Sample 3
Start here for Question Number: 5			
R5.a)			
i) A = 2	-πr² + 2πrh		
A =	LII r		
2	TITA = SUMATE	area.	
	r = 211		
	h =====		
V =	Tr26.		THE STATE OF THE S
₹ =	πr²h.		
h =	TI 1 2	/0	
A =	2 11 + 27 + 27 + 10	Tr2)	
=	21112 + 2 th		
	2 Tr2 + 20		
n ) A =	211 r + 211 rh	A = 211 r2 + 20	
dr AD =	411 r + 211 h.	$A = 2\pi r^2 + \frac{20}{r}$ $\frac{dA}{dr} = 4\pi r + \frac{20}{r} \times \frac{20}{r}$	ior <sup>+7</sup> .
		= 4Tr'-20	r-z .
<u>d</u>	$\frac{A}{r} = C$		
	$4\pi r - 20r^{-2} = 0$		
bes	Y CAT 20 1"		
	4Tr =20r	-2	
	$\frac{4\pi}{20} = \frac{r^2}{r}$		
	±π/20 = r		
	T 20 > 0	c, minimum value	
	$z_{v} = \frac{q}{26}$		

b)i). 
$$\sec^2 x + \sec x + \tan x = \frac{1 + \sin x}{\cos^2 x}$$

ii) 
$$Sec^2 > c + sec \times tan > c = \frac{1+ sin > c}{(os^2 \times c)}$$

Additional writing space on back page.

$y = \frac{1}{x}  \text{for } x > 0$	
$\int_{1}^{a} \frac{1}{x} dx$	J'b to dx
1 = I loge x ] a	1 = [10go >c]'b
1 = loge a + loge 1	1 = loge 1 - loge b.
-loge a = -1+ loge 1	logeb = loge1-1
- loge a = -1	10geb = -1
(09e a = 1 a = e'	b =-e1

You may ask for an extra Writing Booklet if you need more space to answer question 5.

