

INTERNATIONAL A-LEVEL MATHEMATICS

MA03

(9660/MA03) Unit P2 Pure Mathematics

Mark scheme

January 2026

Version: 1.0 Final

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from www.oxfordaqa.com

Copyright information

OxfordAQA retains the copyright on all its publications. However, registered schools/colleges for OxfordAQA are permitted to copy material from this booklet for their own internal use, with the following important exception: OxfordAQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Copyright © 2026 OxfordAQA International Examinations and its licensors. All rights reserved.

Key to mark scheme abbreviations

M	Mark is for method
m	Mark is dependent on one or more M marks and is for method
A	Mark is dependent on M or m marks and is for accuracy
B	Mark is independent of M or m marks and is for method and accuracy
E	Mark is for explanation
✓ or ft	Follow through from previous incorrect result
CAO	Correct answer only
CSO	Correct solution only
AWFW	Anything which falls within
AWRT	Anything which rounds to
ACF	Any correct form
AG	Answer given
SC	Special case
oe	Or equivalent
A2, 1	2 or 1 (or 0) accuracy marks
–x EE	Deduct x marks for each error
NMS	No method shown
PI	Possibly implied
SCA	Substantially correct approach
sf	Significant figure(s)
dp	Decimal place(s)
ISW	Ignore subsequent working

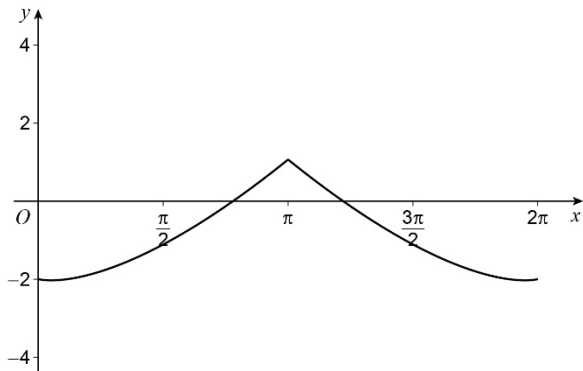
Q	Answer	Marks	Comments
2	Stretch + either I or II	M1	
	Parallel to y -axis I	A1	
	SF 5 II		
	Translation	M1	
	$\begin{bmatrix} -360^\circ [\pm 1440^\circ n] \\ 0 \end{bmatrix} \text{ or } \begin{bmatrix} -2\pi [\pm 8n\pi] \\ 0 \end{bmatrix}$	A1	
		4	
	Question 2 Total	4	

Q	Answer	Marks	Comments
3(a)	$-3 \leq f(x) \leq 3$	M1 A1	oe eg $f(x) \in [-3, 3]$ Condone 'y' for $f(x)$ For strict inequalities M1A0
		2	

Q	Answer	Marks	Comments
3(b)(i)	$x = 3 \cos\left(\frac{y}{2}\right)$ $\frac{x}{3} = \cos\left(\frac{y}{2}\right)$ $f^{-1}(x) = 2 \cos^{-1}\left(\frac{x}{3}\right)$	M1 M1 A1	'Swap' x and y Attempt to rearrange
		3	

Q	Answer	Marks	Comments
3(b)(ii)	$\left[2 \cos^{-1}\left(\frac{x}{3}\right) = \frac{3\pi}{2} \right] \quad \frac{x}{3} = \cos\left(\frac{3\pi}{4}\right)$ $x = -\frac{3}{\sqrt{2}} \quad \text{oe}$	M1 A1	$X = \cos\left(\frac{3\pi}{2}\right) \quad \left[= \cos\left(\frac{3\pi}{4}\right) \right]$ $x = 3 \times \left(-\frac{1}{\sqrt{2}}\right) = -\frac{3}{\sqrt{2}}$
		2	

Q	Answer	Marks	Comments
3(c)(i)	$\left[h(x) = \right] 1 - \left 3 \cos\left(\frac{x}{2}\right) \right $	B1	or $3 \left \cos\left(\frac{x}{2}\right) \right $
		1	

Q	Answer	Marks	Comments
3(c)(ii)		B1 B1 B1	Correct symmetry, intersecting x -axis between $\pi/2$ and π Correct cusp and curvature Range from -2 to 1 with curve crossing axis exactly twice
		3	
	Question 3 Total	11	

Q	Answer	Marks	Comments
4(a)	$\begin{bmatrix} p \\ 1 \\ -1 \end{bmatrix} \cdot \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix} = p - 1$ $\cos 60^\circ = \frac{p-1}{\sqrt{(p^2+2)} \times \sqrt{2}}$ $(2p-2) = \sqrt{2p^2+4}$ $(2p-2)^2 = 2p^2+4$ $2p^2-8p=0$ $p=4 \quad [\text{as } p > 0]$	<p>B1</p> <p>M1</p> <p>A1</p> <p>m1</p> <p>A1</p>	<p>oe</p> <p>Attempt to solve for p</p> <p>If $p = 0$ seen, then must be rejected</p>
		5	

Q	Answer	Marks	Comments
4(b)	$2 + p\lambda = -1 + \mu$ $3 + \lambda = 4$ $\lambda = 1, \quad \mu = 3 + p [= 7]$ $5 - \lambda = q + \mu$ $q = 4 - (3 + p)$ $q = -3$	<p>M1</p> <p>A1ft</p> <p>A1</p>	<p>Equating 'x' and 'y'</p> <p>Correct λ and their correct μ</p>
		3	

	Question 4 Total	8	
--	-------------------------	----------	--

Q	Answer	Marks	Comments
5(a)(i)	$a + b + c - 6 = 45$ $-a + b - c - 6 = -5$ $\left[a(-0.5)^3 + b(-0.5)^2 - 0.5c - 6 = -9 \right]$	M1	One correct substitution OR for M1 use of long division
	$a + b + c = 51$ $-a + b - c = 1$ $b = 26$	A1	Two substitutions correct or $2b - 12 = 40$ $b = 26$
		A1	AG Must be convincingly shown
		3	

Q	Answer	Marks	Comments
5(a)(ii)	$-a + 2b - 4c = -24$ $-a - 4c = -76$ $a + c = 25$	M1	Attempt to solve PI
	$a = 8$ $c = 17$	A1 A1	
		3	

Q	Answer	Marks	Comments
5(b)(i)	$\left[8 \times (-2)^3 + 26 \times (-2)^2 + 17 \times (-2) - 6 \right]$ $-64 + 104 - 34 - 6 = 0$	B1	AG Must be convincingly shown
		1	

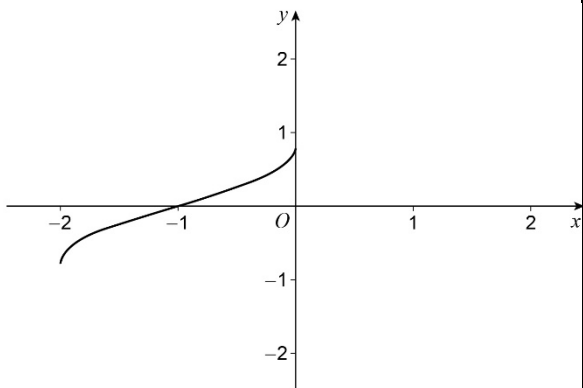
Q	Answer	Marks	Comments
5(b)(ii)	$f(x) = (x+2)(8x^2+10x-3)$ $\frac{f(x)}{(4x+1)(x+2)} = \frac{(x+2)(8x^2+10x-3)}{(4x+1)(x+2)}$ $= \frac{(4x+1)(ax+b)+c}{(4x+1)}$ $= 2x+2 - \frac{5}{4x+1}$ $2(x+1) + \frac{-5}{4x+1}$	<p>B1</p> <p>M1</p> <p>A1</p>	
		3	
	Question 5 Total	10	

Q	Answer	Marks	Comments												
6(a)	<table><tr><th>x</th><th>y</th></tr><tr><td>0</td><td>$\left(1 - \left(0^3\right)\right)^{\frac{1}{2}} = 1$</td></tr><tr><td>0.25</td><td>$\left(1 - \left(0.5 \times 0.25^3\right)\right)^{\frac{1}{2}} = 0.99608609$</td></tr><tr><td>0.5</td><td>$\left(1 - \left(0.5 \times 0.5^3\right)\right)^{\frac{1}{2}} = 0.9682458$</td></tr><tr><td>0.75</td><td>$\left(1 - \left(0.5 \times 0.75^3\right)\right)^{\frac{1}{2}} = 0.8882919$</td></tr><tr><td>1</td><td>$\left(1 - \left(0.5 \times 1^3\right)\right)^{\frac{1}{2}} = 0.70710678$</td></tr></table>	x	y	0	$\left(1 - \left(0^3\right)\right)^{\frac{1}{2}} = 1$	0.25	$\left(1 - \left(0.5 \times 0.25^3\right)\right)^{\frac{1}{2}} = 0.99608609$	0.5	$\left(1 - \left(0.5 \times 0.5^3\right)\right)^{\frac{1}{2}} = 0.9682458$	0.75	$\left(1 - \left(0.5 \times 0.75^3\right)\right)^{\frac{1}{2}} = 0.8882919$	1	$\left(1 - \left(0.5 \times 1^3\right)\right)^{\frac{1}{2}} = 0.70710678$	<div>B1</div> <div>M1</div>	<p>All 5 correct x values (and no extra used) PI by 5 correct y values</p> <p>At least 4 correct y values in exact form or decimals, rounded or truncated to 3 dp or better (in table or formula) (PI by AWRT correct answer)</p>
	x	y													
0	$\left(1 - \left(0^3\right)\right)^{\frac{1}{2}} = 1$														
0.25	$\left(1 - \left(0.5 \times 0.25^3\right)\right)^{\frac{1}{2}} = 0.99608609$														
0.5	$\left(1 - \left(0.5 \times 0.5^3\right)\right)^{\frac{1}{2}} = 0.9682458$														
0.75	$\left(1 - \left(0.5 \times 0.75^3\right)\right)^{\frac{1}{2}} = 0.8882919$														
1	$\left(1 - \left(0.5 \times 1^3\right)\right)^{\frac{1}{2}} = 0.70710678$														
	$\frac{1}{3} \times 0.25 \times \left(1 + 0.70710678 + 4(0.99608609 + 0.8882919) + 2 \times 0.9682458\right)$ $= 0.9318$	<div>m1</div> <div>A1</div>	<p>Correct sub into formula with $h = 0.25$ oe and at least 4 correct y values either listed, with + signs, or totalled. (PI by AWRT correct answer) CAO, must see this value exactly and no error seen</p>												
		4													

Q	Answer	Marks	Comments
6(b)	$1 + \frac{1}{2} \left(-\frac{1}{2} x^3 \right) + \frac{\frac{1}{2} \left(-\frac{1}{2} \right) \left(-\frac{1}{2} x^3 \right)^2}{2}$ $= 1 - \frac{1}{4} x^3 - \frac{1}{32} x^6$	M1 A1	$1 + px^3 + qx^6$ with p or q correct, may be unsimplified
		2	

	Question 6 Total	6	
--	------------------	---	--

Q	Answer	Marks	Comments
7(a)	$P\left(-1, -\frac{\pi}{2}\right) \quad Q\left(1, \frac{\pi}{2}\right)$	B1	
		1	

Q	Answer	Marks	Comments
7(b)		<p>M1</p> <p>A1</p>	<p>Correct shape AND Either passing through $(-1, 0)$ or range between $\left(-\infty, -\frac{\pi}{4}\right)$ and $\left(\dots, \frac{\pi}{4}\right)$ approx</p> <p>All correct, including range between $\left(-2, -\frac{\pi}{4}\right)$ and $\left(0, \frac{\pi}{4}\right)$ approx. and passing through $(-1, 0)$</p>
		2	

Q	Answer	Marks	Comments
7(c)(i)	$2y = \sin^{-1}(x+1)$ $x = -1 + \sin 2y$	<p>M1</p> <p>A1</p>	
		2	

Q	Answer	Marks	Comments
7(c)(ii)	$x = -1 + \sin 2y$ $\frac{dx}{dy} = 2\cos 2y$ $y = \frac{\pi}{12}, \quad \frac{dx}{dy} \left[= 2\cos\left(2 \times \frac{\pi}{12}\right) \right] = \sqrt{3}$	<p>M1</p> <p>A1</p>	$k \cos 2y$
		2	

	Question 7 Total	7	
--	------------------	---	--

Q	Answer	Marks	Comments
8(a)(i)	28°	B1	
		1	

Q	Answer	Marks	Comments
8(a)(ii)	$\frac{2}{3}$	B1	oe
		1	

Q	Answer	Marks	Comments
8(b)	$\tan^2 X + 9 = 6 \sec X$ $\sec^2 X - 6 \sec X + 8 = 0$ $(\sec X - 4)(\sec X - 2) = 0$ or $\left[\begin{array}{l} 8 \cos^2 X - 6 \cos X + 1 = 0 \\ (4 \cos X - 1)(2 \cos X - 1) = 0 \end{array} \right]$ $\sec X = 2, 4$ $X = 1.05 \text{ or } \frac{\pi}{3}, 1.32$ $x = 0.87, 1.01, 2.83, 2.97$	M1 A1 A1 B2	Correct use of trig identity and rearranged into equation =0 X could be Y PI All values rounded to at least 2dp and no others in the interval B1 for three correct
		5	

	Question 8 Total	7	
--	------------------	---	--

Q	Answer	Marks	Comments
9	$\frac{14}{2-x-6x^2} = \frac{14}{(2+3x)(1-2x)}$	B1	
	$\frac{14}{(2+3x)(1-2x)} = \frac{A}{2+3x} + \frac{B}{1-2x}$	M1	Attempt at partial fractions
	$x = \frac{1}{2}; 14 = \frac{7}{2}B$		
	$x = -\frac{2}{3}; 14 = \frac{7}{3}A$		
	$B = 4 \quad A = 6$	A1	All correct
	$\int \frac{14}{2-x-6x^2} dx = \int \frac{A}{2+3x} + \frac{B}{1-2x} dx$ $= \frac{6}{3} \ln 2+3x + \frac{4}{-2} \ln 1-2x $	m1	Attempt at integration
		A1	$p \ln(\text{their } 2+3x) + q \ln(\text{their } 1-2x)$ All correct Condone use of other brackets
	$= 2 \ln \left \frac{2+3x}{1-2x} \right + c$	A1	Condone use of other brackets and omission of $+c$
		6	

	Question 9 Total	6	
--	------------------	---	--

Q	Answer	Marks	Comments
10(a)	$4x + y = (x - y)^2$ $4 + \frac{dy}{dx} = 2(x - y) \left(1 - \frac{dy}{dx} \right)$ or $4 + \frac{dy}{dx} = 2x - 2y - 2x \frac{dy}{dx} + 2y \frac{dy}{dx}$ $\frac{dy}{dx} + 2x \frac{dy}{dx} - 2y \frac{dy}{dx} = 2x - 2y - 4$ $\frac{dy}{dx} = \frac{2x - 2y - 4}{1 + 2x - 2y}$	M1 A1 A1	Attempt at implicit differentiation, at least two terms in $\frac{dy}{dx}$ correct All correct AG Must be convincingly shown
		3	

Q	Answer	Marks	Comments
10(b)	$\left[\frac{dy}{dx} = 0 \right] 2x - 2y = 4$ $x - y = 2$ $4x + y = 2^2$ $5x = 6$ or $5y = -4$ $x = 1.2, y = -0.8$ $(1.2, -0.8)$	B1 M1 m1 A1	Oe Substitution into original equation Equation in one variable Both correct
		4	

Q	Answer	Marks	Comments
10(c)	$\frac{d}{dx} \left(\frac{2x-2y-4}{1+2x-2y} \right) =$ $\frac{(1+2x-2y) \left(2 - 2 \frac{dy}{dx} \right) - (2x-2y-4) \left(2 - 2 \frac{dy}{dx} \right)}{(1+2x-2y)^2}$ $= \frac{(1+2x-2y-2x+2y+4) \left(2 - 2 \frac{dy}{dx} \right)}{(1+2x-2y)^2}$ <p>At (1.2, -0.8):</p> $\frac{d}{dx} \left(\frac{2x-2y-4}{1+2x-2y} \right) = \frac{10 \left(1 - \frac{dy}{dx} \right)}{(1+2.4+1.6)^2} = 0.4 > 0$ <p>As > 0, point is a minimum</p>	<p>M1</p> <p>A1</p> <p>m1</p> <p>A1</p> <p>E1</p>	<p>Attempt to differentiate, condone one error</p> <p>All correct</p> <p>Attempt to evaluate</p> <p>Must see 10 as numerator and denominator as positive</p> <p>Must have been awarded the previous four marks</p>
		5	

[illegible]

	Question 10 Total	12	
--	--------------------------	-----------	--

Q	Answer	Marks	Comments
11(a)	$\frac{dx}{dt} = \frac{(t-1)2p-2pt}{(t-1)^2}$	M1	Either correct
	$\frac{dy}{dt} = \frac{(t-1)2pt-pt^2}{(t-1)^2}$	A1	Both correct
	$\frac{dy}{dx} = \frac{(t-1)2pt-pt^2}{(t-1)2p-2pt}$	A1	ACF eg $\frac{dy}{dx} = \frac{1}{2}t(2-t)$
		3	

Q	Answer	Marks	Comments
11(b)	$t = 3$		
	$\frac{dy}{dx} = -\frac{3}{2}$	B1	
	$x = 3p, y = \frac{9p}{2}$	B1	Both correct
	$y - \frac{9p}{2} = -\frac{3}{2}(x - 3p)$	M1	Correct subst <i>their</i> values into a tangent equation
	$2y - 9p = -3x + 9p$		
	$3x + 2y - 18p = 0$	A1	
		4	

Q	Answer	Marks	Comments
11(c)	$x = \frac{2pt}{t-1}$ $(t-1)x = 2pt$ $t = \frac{x}{x-2p}$ $y = \frac{pt^2}{t-1} \quad y = p\left(\frac{x}{x-2p}\right)^2 \left(\frac{x-2p}{2p}\right)$ $y = \frac{1}{2}\left(\frac{x^2}{x-2p}\right)$	<p>M1</p> <p>A1</p> <p>m1</p> <p>A1</p>	<p>Attempt to isolate t</p> <p>Attempt to eliminate t</p> <p>ACF for $f(x)$</p>
		4	

Q	Answer	Marks	Comments
11(c) ALT	$x = \frac{2pt}{t-1}$ $y = \frac{1}{2}xt$ $t = \frac{2y}{x}$ $x = \frac{2p \frac{2y}{x}}{\frac{2y}{x} - 1} = \frac{4py}{2y-x}$ $2yx - x^2 = 4py$ $y(2x - 4p) = x^2$ $y = \frac{1}{2}\left(\frac{x^2}{x-2p}\right)$	<p>M1</p> <p>A1</p> <p>m1</p> <p>A1</p>	
		4	

	Question 11 Total	11	
--	--------------------------	-----------	--

Q	Answer	Marks	Comments
12(a)	$\frac{dy}{dx} = \frac{(5x+3) \times 5 - 5x \times 5}{(5x+3)^2}$ $= \frac{15}{(5x+3)^2}$	M1 A1	Clear use of quotient rule All correct
		2	

Q	Answer	Marks	Comments
12(b)(i)	$\frac{dy}{dx} = \ln(5x+3) + x \times \frac{5}{(5x+3)}$	M1 M1 A1	Correct differentiation of ln Correct use of product rule All correct ACF
		3	

Q	Answer	Marks	Comments
12(b)(ii)	$x=1, \left[\frac{dy}{dx} \right] \ln(8) + \frac{5}{8} = \frac{5+8\ln 8}{8}$ Grad normal = $-\frac{8}{(5+8\ln 8)}$ $x=1, y=\ln 8,$ Equ normal $y - \ln 8 = -\frac{8}{(5+8\ln 8)}(x-1)$	M1 M1 A1	Correctly finding their gradient Correctly finding their grad normal All correct ACF
		3	

Q	Answer	Marks	Comments
12(c)(i)	$u = 5x + 3, du = 5dx$ $\int \frac{5x}{5x+3} dx = \int \frac{u-3}{u} \frac{du}{5}$ $= \frac{1}{5} \int \left(1 - \frac{3}{u}\right) du$ $= \frac{1}{5} u - \frac{3}{5} \ln u$ $= \frac{1}{5} (5x+3) - \frac{3}{5} \ln(5x+3) \quad [+c]$	B1 M1 A1 A1	oe all in terms of u and du or $\frac{1}{5}u - \frac{3}{5}\ln 5u$ ACF
		4	

Q	Answer	Marks	Comments
12(c)(ii)	$\int \ln(5x+3) dx$ $u = \ln(5x+3), dv = 1$ $du = \frac{5}{5x+3}, v = x$ $\int \ln(5x+3) dx = x \ln(5x+3) - \int \frac{5x}{5x+3} dx$ $= x \ln(5x+3) - \frac{1}{5} (5x+3) + \frac{3}{5} \ln(5x+3) + c$	M1 A1 m1 A1	Attempt at parts All correct Correct subst into parts formula ACF – including $+c$
		4	

	Question 12 Total	16	
--	--------------------------	-----------	--

Q	Answer	Marks	Comments
13	$(1 + \sin^2 x) \frac{dy}{dx} = e^{-0.5y} \sin 2x$ $\int \frac{1}{e^{-0.5y}} dy = \int \frac{\sin 2x}{(1 + \sin^2 x)} dx$ $\int e^{0.5y} dy = \int \frac{2 \sin x \cos x}{(1 + \sin^2 x)} dx$ $2e^{0.5y} = \ln(1 + \sin^2 x) + c$ $(0, 4) \quad 2e^2 = \ln(1) + c$ $c = 2e^2$ $2e^{0.5y} = \ln(1 + \sin^2 x) + 2e^2$ $x = \frac{\pi}{4}$ $2e^{0.5y} = \ln\left(1 + \frac{1}{2}\right) + 2e^2$ $e^{0.5y} = \frac{1}{2} \ln\left(\frac{3}{2}\right) + e^2$ $0.5y = \ln\left(\frac{1}{2} \ln\left(\frac{3}{2}\right) + e^2\right)$ $y = 2 \ln\left(\frac{1}{2} \ln\left(\frac{3}{2}\right) + e^2\right)$	<p>M1</p> <p>A1</p> <p>m1</p> <p>A1</p> <p>M1</p> <p>A1</p> <p>M1</p> <p>A1</p>	<p>Separate variables oe must use double angle eg $\left[\int e^{0.5y} dy = \right] \int \frac{2 \sin 2x}{(3 - \cos 2x)} dx$</p> <p>$p e^{0.5y} = q \ln(1 + \sin^2 x) [+c]$ oe All correct, condone omission of $+c$</p> <p>Attempt to find c, must have been awarded M1m1</p> <p>Correct subst and attempt to isolate y from $a e^{0.5y} = p \ln q + c$</p> <p>ACF</p>
		8	
	Question 13 Total	8	

Q	Answer	Marks	Comments
14(a)(i)	$y = \frac{1}{\cos x}$ $\frac{dy}{dx} = \frac{[\cos x \times 0] - 1(-\sin x)}{\cos^2 x} = \frac{\sin x}{\cos^2 x}$ $= \sec x \tan x$	M1 A1	Must be quotient rule AG Must be convincingly shown
		2	

Q	Answer	Marks	Comments
14(a)(ii)	$y = \ln(\sec x + \tan x)$ $\frac{dy}{dx} = \frac{\sec x \tan x + \sec^2 x}{(\sec x + \tan x)}$ $= \frac{\sec x(\tan x + \sec x)}{(\sec x + \tan x)} = \sec x$	M1 A1	AG Must be convincingly shown
		2	

Q	Answer	Marks	Comments
14(b)	$[\text{Vol} =] \pi \int_0^{\frac{\pi}{6}} (\tan x + 2 \sin x)^2 dx$ $(\tan x + 2 \sin x)^2 = \tan^2 x + 4 \sin x \tan x + 4 \sin^2 x$ $[V = \pi] \int \tan^2 x + 4 \sin^2 x \sec x + 4 \sin^2 x dx$ $= [\pi] \int (\sec^2 x - 1) + \frac{4(1 - \cos^2 x)}{\cos x} + 2(1 - \cos 2x) dx$ $= [\pi] \int \sec^2 x + 1 + 4 \sec x - 4 \cos x - 2 \cos 2x dx$ $= [\pi] \left[(\tan x + x + 4 \ln (\sec x + \tan x) - 4 \sin x - \sin 2x) \right]_0^{\frac{\pi}{6}}$ $= [\pi] \left(\frac{1}{\sqrt{3}} + \frac{\pi}{6} + 4 \ln \left(\frac{2}{\sqrt{3}} + \frac{1}{\sqrt{3}} \right) - 2 - \frac{\sqrt{3}}{2} \right) - 0$ $= \frac{\pi}{6} (\pi - 12 - \sqrt{3} + 12 \ln 3)$	<p>B1</p> <p>B1</p> <p>M1</p> <p>m1</p> <p>m1</p> <p>A1</p>	<p>Correct volume statement PI</p> <p>Correct expansion oe</p> <p>Correct use of three trig identities</p> <p>Correct form of integration</p> <p>Correct subst of limits into their expression (must have been awarded M1m1)</p>
		6	
	Question 14 Total	10	