



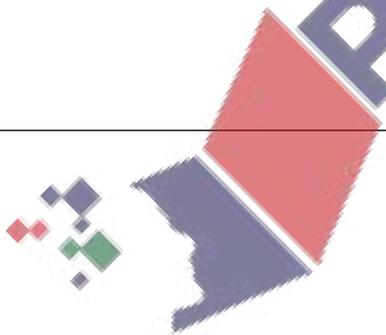
Topical Worksheets for Cambridge O LEVEL Mathematics (4024)

Practice paper (40 marks)

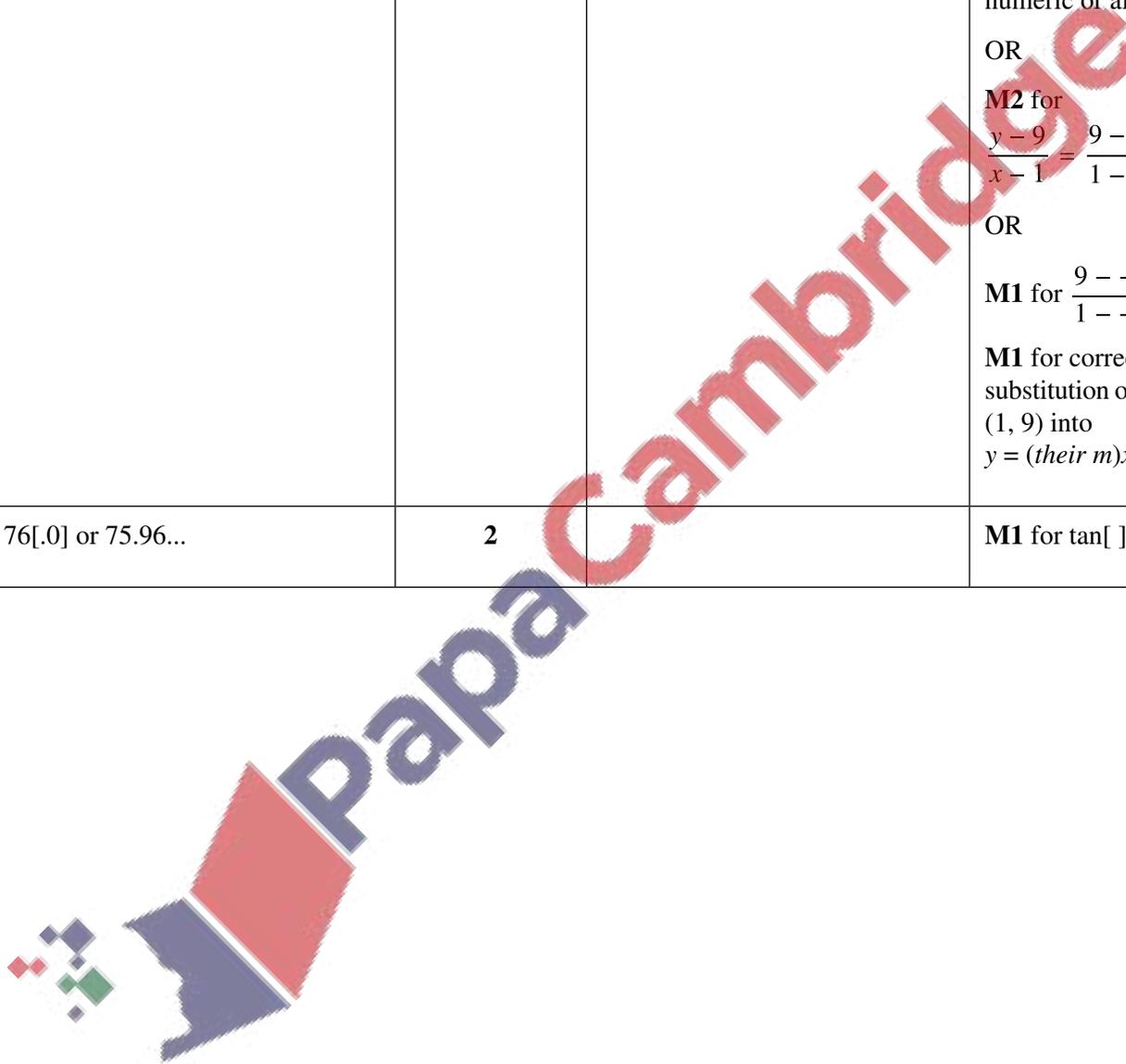
[Mark Scheme](#)

1st edition, for examination until 2025

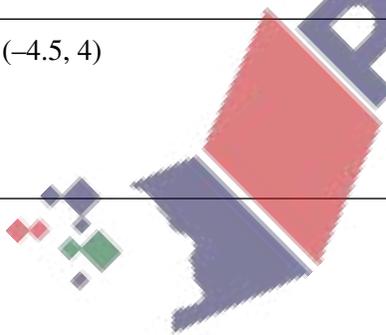
Question	Answer	Marks	AO Element	Notes	Guidance
1(a)	$y = 2x - 3$ oe	3		<p>B2 for $2x - 3$ or $y = \textit{their } m x - 3$ or $y = 2x + c$ or M1 for $\frac{9 - (-3)}{6 - 0}$ oe or $9 = 6m - 3$ oe or B1 for $2x$ seen or $[y =]mx - 3 \quad m \neq 0$</p>	
1(b)	$y = -\frac{1}{2}x + 2$ oe	2		<p>FT <i>their (a)</i> $y = -\frac{1}{\textit{their } m}x + 2$ B1 for gradient $-\frac{1}{2}$, gradient FT <i>their (a)</i> or for $y = mx + 2 \quad m \neq 0$</p>	
2	13.9 or 13.92 to 13.93	3		<p>M2 for $\sqrt{(7 - 2)^2 + (12 - -1)^2}$ oe or M1 for $(7 - 2)^2 + (12 - -1)^2$ oe</p>	



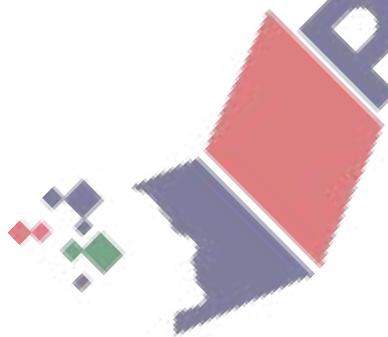
Question	Answer	Marks	AO Element	Notes	Guidance
3(a)	$[y =] 4x + 5$	3		<p>B2 for answer $[y =] 4x + c$ oe (c can be numeric or algebraic)</p> <p>OR</p> <p>M2 for $\frac{y - 9}{x - 1} = \frac{9 - (-3)}{1 - (-2)}$ oe</p> <p>OR</p> <p>M1 for $\frac{9 - -3}{1 - -2}$ oe</p> <p>M1 for correct substitution of $(-2, -3)$ or $(1, 9)$ into $y = (their\ m)x + c$ oe</p>	
3(b)	76[.0] or 75.96...	2		M1 for $\tan[] = 4$ oe	



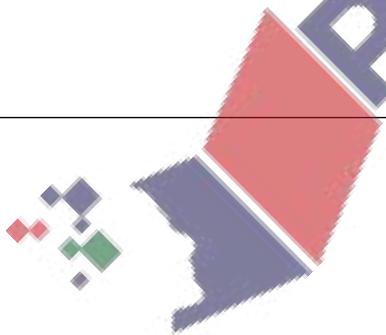
Question	Answer	Marks	AO Element	Notes	Guidance
3(c)(i)	$[y =] -\frac{1}{4}x + \frac{23}{8}$ oe	3		<p>B2FT for $[y =]$ $-\frac{1}{\text{their } m \text{ from (a)}} x + c$ oe (c can be numeric or algebraic) OR M2 for $\frac{y - 2}{x - 3.5}$ $= -\frac{1}{\text{their } m \text{ from (a)}}$ oe OR M1 for $-\frac{1}{\text{their } m \text{ from (a)}}$ soi M1 for correct substitution of (3.5, 2) into $y = (\text{their } m)x + c$ oe</p>	
3(c)(ii)	(-4.5, 4)	2		<p>B1 for each value or for $\begin{pmatrix} -8 \\ 2 \end{pmatrix}$ seen</p>	



Question	Answer	Marks	AO Element	Notes	Guidance
4	49 000	3		<p>M1 for $4.9 \times (10\,000\,000)^2$</p> <p>M1 for $\div (100\,000)^2$</p> <p>OR</p> <p>M1 for 1 cm : 100 km</p> <p>M1 for $4.9 \times (\textit{their } 100)^2$</p> <p>OR</p> <p>M2 for $\left(\frac{\sqrt{4.9} \times 10\,000\,000}{100\,000}\right)^2$</p> <p>or M1 for $\frac{\sqrt{4.9} \times 10\,000\,000}{100\,000}$</p>	



Question	Answer	Marks	AO Element	Notes	Guidance
5	1500	3		<p>M2 for $12 \div \left(\frac{20}{100}\right)^3$ oe or M1 for $\left(\frac{20}{100}\right)^3$ or $\left(\frac{100}{20}\right)^3$ oe OR M1 for $\div 20^3$ oe M1 for $\times 100^3$ oe</p>	
6	12.5 or 12.50...	3		<p>M2 for $17 \times \sqrt{\frac{159.5}{295}}$ oe or M1 for $\sqrt{\frac{159.5}{295}}$ or $\sqrt{\frac{295}{159.5}}$ seen or for $\frac{159.5}{295} = \frac{x^2}{17^2}$ oe</p>	



Question	Answer	Marks	AO Element	Notes	Guidance
7	380	5		<p>B2 for time = 8, implied by 23 on t-axis</p> <p>or M1 for $\frac{20}{t} = 2.5$</p> <p>or $\frac{20}{t-15} = 2.5$</p> <p>or $\frac{0-20}{t-15} = -2.5$ oe</p> <p>M2 for</p> <p>$\frac{1}{2}$ (their 23 + 15) \times 20</p> <p>or</p> <p>$20 \times 15 + \frac{1}{2} \times$ their 8×20</p> <p>oe</p> <p>or M1 for any relevant area found</p>	
8	$\frac{P}{2 + \pi}$	2		M1 for $P = r(2 + \pi)$	
9(a)	19	2		M1 for $3(2^x) - 5$ soi or for $f(8)$	
9(b)	$\frac{x+5}{3}$ oe final answer	2		<p>M1 for correct first step</p> <p>$y + 5 = 3x$</p> <p>or $\frac{y}{3} = x - \frac{5}{3}$</p> <p>or $x = 3y - 5$</p>	
10	$5 - 2x$ final answer	2		M1 for $2(1 - x) + 3$ oe	

Question	Answer	Marks	AO Element	Notes	Guidance
					[Total: 40]

