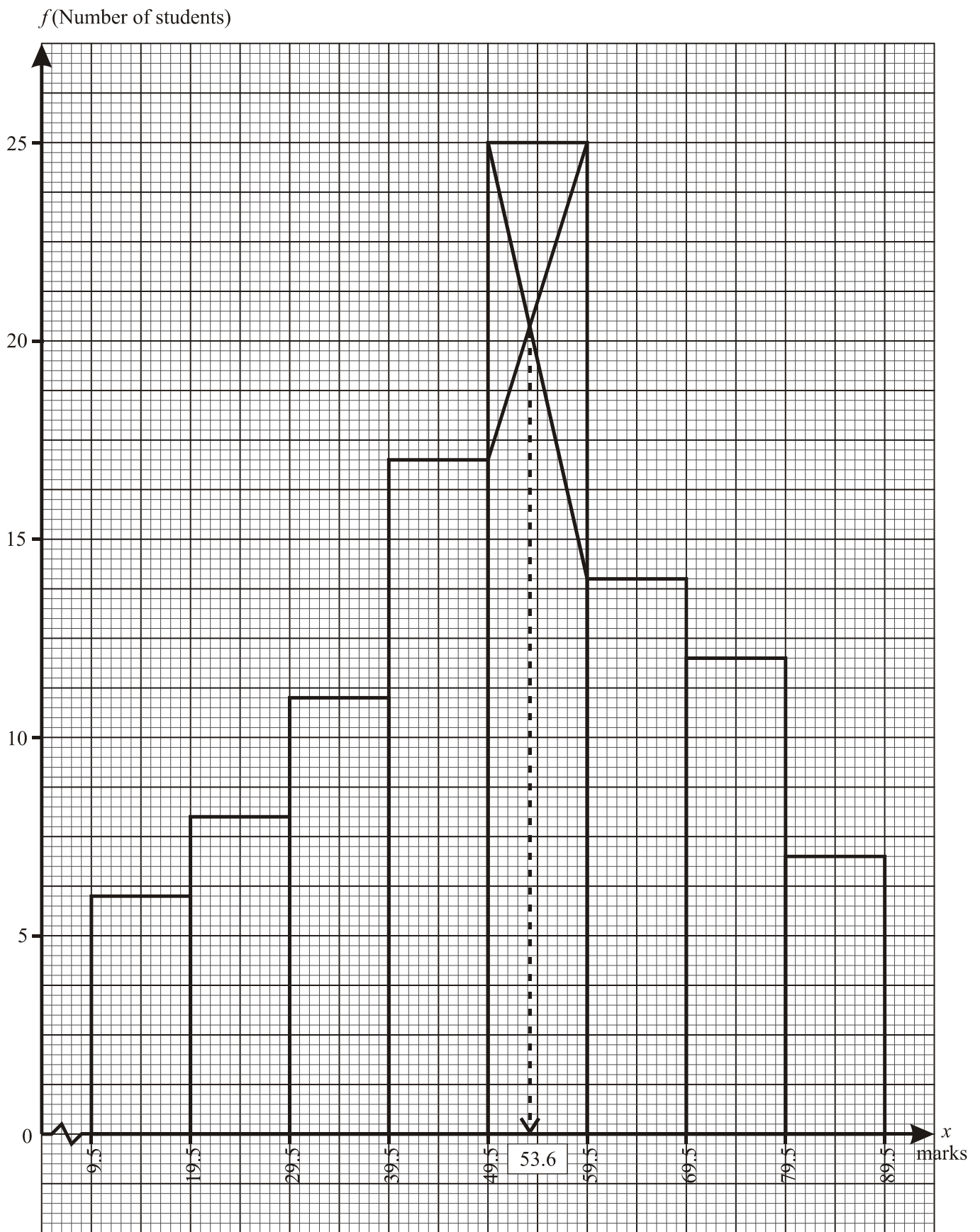


Question	Solution and Marking Scheme	Sub Marks
9	<p>(a) (i) Median = $49.5 + \left(\frac{\frac{100}{2} - 42}{25} \right) 10$ (K1)</p> <p style="margin-left: 150px;">$= 52.7$ (N1)</p> <p>(ii) Mean = $\frac{1}{100} [6(14.5) + 8(24.5) + 11(34.5) + 17(44.5) + 25(54.5) + 14(64.5) + 12(74.5) + 7(84.5)]$</p> <p>(K1) (N1) = 51.7</p> <p>(iii) Standard deviation = $\sqrt{\frac{301905}{100} - 51.7^2}$ (K1)</p> <p style="margin-left: 150px;">$= 18.61$ (N1)</p> <p>*For (K1) 301905 or $[6(14.5)^2 + 8(24.5)^2 + 11(34.5)^2 + 17(44.5)^2 + 25(54.5)^2 + 14(64.5)^2 + 12(74.5)^2 + 7(84.5)^2]$ and follow through for the mean</p> <p>(b) (N1) Axes with uniform scale and correct labelling for the boundaries or midpoints.</p> <p>(N1) All eight(8) bars correct.</p> <p>(K1) Correct method for determining the mode.</p> <p>(N1) $53.0 < \text{mode} < 54.0$</p>	

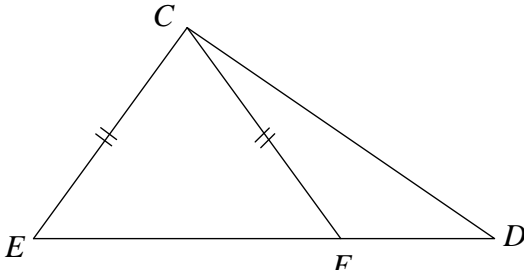
Question 9



Question	Solution and Marking Scheme	Sub Marks
10	<p>(a) $p = 0.65$ and $q = 0.35$ or seen N1</p> <p>$P(X \geq 3) = 1 - P(X \leq 2)$ or $1 - [P(X = 0) + P(X = 1) + P(X = 2)]$ or $P(X = 3) + P(X = 4) + P(X = 5) + P(X = 6) + P(X = 7)$ + $P(X = 8) + P(X = 9) + P(X = 10)$</p> <p>K1</p> <p>$1 - {}^{10}C_0(0.65)^0(0.35)^{10} - {}^{10}C_1(0.65)^1(0.35)^9 - {}^{10}C_2(0.65)^2(0.35)^8$ or ${}^{10}C_3(0.65)^3(0.35)^7 + {}^{10}C_4(0.65)^4(0.35)^6 + {}^{10}C_5(0.65)^5(0.35)^5$ + ${}^{10}C_6(0.65)^6(0.35)^4 + {}^{10}C_7(0.65)^7(0.35)^3 +$ ${}^{10}C_8(0.65)^8(0.35)^2$ + ${}^{10}C_9(0.65)^9(0.35)^1 + {}^{10}C_{10}(0.65)^{10}(0.35)^0$</p> <p>K1</p> <p>N1</p> <p>0.9952</p> <p>(b) (i) $z = 1.1$ N1</p> <p>(ii) $\frac{x - 55}{10} = -1.03$ K1</p> <p>$x = 44.7$ kg N1</p> <p>(iii) $\frac{42 - 55}{10}$ K1</p> <p>$1 - [P(Z > 1.1) + P(Z > 1.3)]$ K1</p> <p>0.7675 N1</p>	

Question	Solution and Marking Scheme	Sub Marks
11	<p>(a) (i) $\frac{1}{2}(5)^2(\frac{\square}{2} - \sin 90^\circ)$ K1 7.1375 or 7.138 cm² N1</p> <p>(ii) $5(\frac{\square}{2}) + 5(4) + 5\square$ K1 43.565 or 43.57 cm N1</p> <p>(iii) $\frac{1}{2}(5)^2(\square) - \frac{1}{2}(5)^2 + \frac{1}{2}(5)^2 - 7.1375$ K1 46.4125 or 46.41 cm N1</p> <p>(b) (i) $\frac{6}{5}$ or 1.2 rad N1</p> <p>(ii) $\frac{1}{2}(5)^2(1.2^*) - \frac{1}{2}BR^2(1.2^*) = 12.6$ K1 $QR = 2^*(1.2^*)$ K1 2.4 cm N1</p> <p>Note: 1.2* follow through on \sphericalangle and 2* follow through on BR</p>	

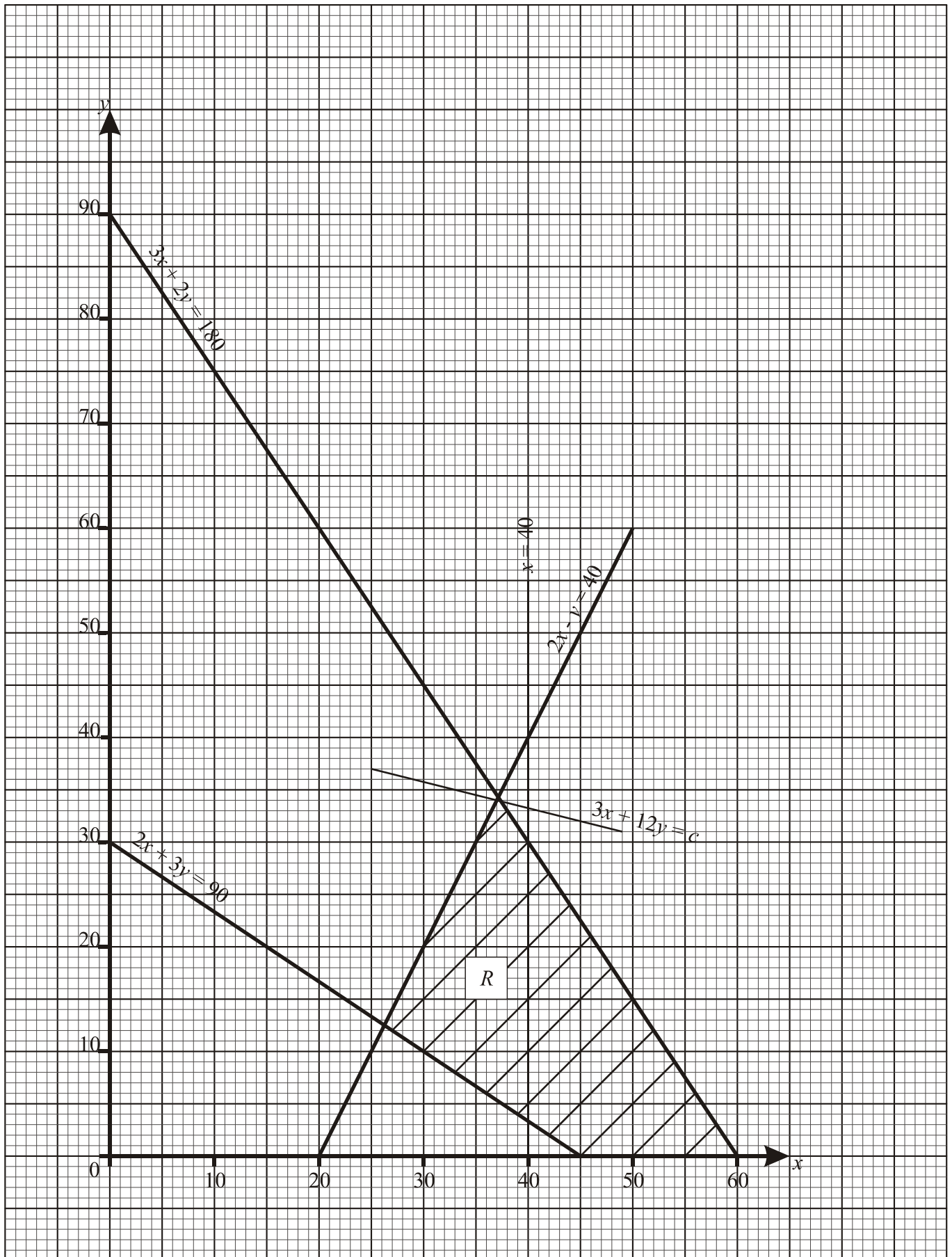
Question	Solution and Marking Scheme	Sub Marks	Full Marks
12	<p>(a) (i) RM2.00 N1</p> <p>(ii) 137.5 N1</p> <p>(iii) RM2.40 N1</p> <p>(b) $\frac{125 \text{ @ } 100 + 125 \text{ @ } 80 + 137.5 \text{ @ } 50 + 150 \text{ @ } 60 + 120 \text{ @ } 30}{100 + 80 + 50 + 60 + 30}$ <div style="text-align: center;"> K1 N1 </div> <p>131.17</p> <p>(c) $\frac{P_{2006}}{2500} \text{ @ } 100 = 131.17^* \text{ @ } 100$ <div style="text-align: center;"> K1 N1 </div> <p>RM3279.25</p> <p>Note: 131.17* follow through on the composite index.</p> <p>(d) $\frac{0.60}{0.55} \text{ @ } 100 \text{ or } \frac{2.45}{2.40} \text{ @ } 100$ K1</p> $\frac{102 \text{ @ } 80 + 102 \text{ @ } 100 + 102 \text{ @ } 60 + \frac{0.60}{0.55} \text{ @ } 100 \text{ @ } 50 + \frac{2.45}{2.40} \text{ @ } 100 \text{ @ } 30}{100 + 80 + 50 + 60 + 30}$ <div style="text-align: center;"> K1 N1 </div> <p>100.27</p> </p></p>		

Question	Solution and Marking Scheme	Sub Marks	Full Marks
13	<p>(a) $AE^2 = 20^2 + AE^2 - 2(AE)(20)\cos 30$ (K1) 11.55 cm (N1)</p> <p>(b) $\frac{1}{2}(20)(11.55^*)\sin 30$ (K1) $2\% \frac{1}{2}(CE)(10)\sin 60^\circ = \frac{1}{2}(20)(11.55^*)\sin 30^\circ$ (K1) 6.668 cm (N1) Note: 11.55* follow through on <i>AE</i></p> <p>(c) $CD^2 = 6.668^{*2} + 10^2 - 2(6.668^*)(10)\cos 60^\circ$ (K1) 8.819 cm (N1) Note: 6.668* follow through on <i>CE</i></p> <p>(d) (i) $\frac{\sin \angle CDE}{6.668^*} = \frac{\sin 60^\circ}{8.819^*}$ (K1) 40.90 (N1)</p> <p>(ii)  (N1)</p>		

Question	Solution and Marking Scheme	Sub Marks	Full Marks
14	<p>(a) $6t - 8$ (K1) -8 ms^{-2} (N1)</p> <p>(b) $t_A = 1 \text{ s}$ or $t_B = \frac{2}{3} \text{ s}, 2 \text{ s}$ (K1) $1 \text{ s} [t [2 \text{ s}$ (N1)</p> <p>(c) $\frac{8}{1}$ (P1) for the correct limits $10t - \frac{10t^2}{2}$ (K1) 8 m (N1)</p> <p>(d) $S_A = 10t - 5t^2$ or $S_B = t^3 - 4t^2 + 4t$ (K1) $t^3 - 4t^2 + 4t = 10t - 5t$ (K1) 2 s (N1)</p>		

Question	Solution and Marking Scheme	Sub Marks	Full Marks
15	<p>(a) I: $2x + 3y \leq 90$ N1</p> <p>II: $3x + 2y \leq 180$ N1</p> <p>III: $2x - y \leq 40$ N1</p> <p>(b) K1 Draw correctly at least one (1) straight line of (a) with correct axes and uniform scale.</p> <p>N1 All three (3) lines of (a) correctly drawn.</p> <p>N1 Region R correctly shaded and labelled.</p> <p>(c) (i) $\frac{3}{4}$ N1</p> <p>(ii) $3x + 12y = \text{any constant}$ or its line representation in the graph</p> <p>$3(37^*) + 12(34^*)$ K1</p> <p>RM519 N1</p> <p>Note: 37^* and 34^* follow through from any clear indication or reading of a maximum point using any line of $3x + 12y$ in the region of R in the graph.</p>		

Question 15 (b)



(SKEMA PERMARKAHAN MATEMATIK TAMBAHAN)
 PERCUBAAN 2007 KERTAS 2

NO. SOALAN	PENYELESAIAN	PER MARKAHAN
1	<p>Menyatakan $3m + 2n = 7$ atau $3m^2 + mn + 6 = 7$</p> <p>$m = \frac{7-2n}{3}$ <u>atau</u> $n = \frac{7-3m}{2}$ <u>atau</u> setara</p> <p>Menghapuskan m atau n</p> <p>$3m^2 + m \left(\frac{7-3m}{2} \right) + 6 = 7$</p> <p><u>atau</u></p> <p>$3 \left(\frac{7-2n}{3} \right)^2 + \left(\frac{7-2n}{3} \right)n + 6 = 7$</p> <p>Selesaikan persamaan kuadratik <u>Menggunakan rumus</u> <u>atau</u> <u>Penyempurnaan kuasa dua</u></p> <p>$m = 0.257, -2.591$ <u>atau</u> $n = 3.114, 7.387$</p> <p><u>ATAU</u></p> <p>$n = 3.114, 7.387$ <u>atau</u> $m = 0.257, -2.591$</p>	<p>P 1</p> <p>P 1</p> <p>K 1</p> <p>K1</p> <p>N 1</p> <p>N 1</p>

NO. SOALAN	PENYELESAIAN	PER MARKAHAN
2 (a)	$f(x) = -2[(x-1)^2 - 1] - 3$ <u>atau</u> setara $f(x) = -2(x-1)^2 - 1$ Nilai maksimum $f(x)$ ialah -1 (b) $x^2 + 4x - 21 \leq 0$ Memfaktorkan ungkapan kuadratik <u>dan</u> mencari julat dengan kaedah yang sesuai $-7 \leq x \leq 3$	K1 N1 N1 K1 K1 N1
3(a)	Menggunakan rumus sudut berganda $\sin 2x = 2 \sin x \cos x$ dan $\cos 2x = 1 - 2 \sin^2 x$ memansuhkan sebutan dalam $\frac{2 \sin x \cos x}{2 \sin^2 x}$ menyatakan $\frac{\cos x}{\sin x} = \cot x$ (b)(i) Mendapatkan $\tan \frac{\theta}{2} = p$ Menggantikan ke dalam $\tan \theta = \frac{2 \tan \frac{\theta}{2}}{1 - \tan^2 \frac{\theta}{2}}$ $\tan \theta = \frac{2p}{1 - p^2}$ (ii) $\sin \theta = \frac{2p}{1 + p^2}$ <u>atau</u> $\cos \theta = \frac{1 - p^2}{1 + p^2}$ menggantikan $p = 2$ ke dalam $2 \left(\frac{2p}{1 + p^2} \right) \left(\frac{1 - p^2}{1 + p^2} \right)$ $-\frac{24}{25}$	P1 K1 N1 P1 N1 K1 K1 N1

NO. SOALAN	PENYELESAIAN	PER MARKAHAN
4(a)	<p>Mencari $\frac{dy}{dx}$ dengan betul <u>dan</u> menggantikan $x = 1$</p> <p>Menggunakan $*m_1 m_2 = -1$</p> $y = x - 2$	K1 K1 N1
(b)	$\frac{dy}{dx} = -4x^{-3}$ $\partial y \approx -\frac{4}{4^3}(-0.1)$ 0.00625	K1 K1 N1
5 (a)	<p>Kamirkan $\int (3x^2 + 2x - 2)dx$</p> $x^3 + x^2 - 2x + c$ <p>Gantikan (1, -3) ke dalam $y = *(x^3 + x^2 - 2x + c)$ untuk mencari nilai c</p> $y = x^3 + x^2 - 2x - 3$	K1 K1 N1
(b)	<p>Kamirkan $\pi \int \left(\frac{4}{y}\right)^2 dy$</p> $16\pi \left(\frac{y^{-1}}{-1}\right)$ <p>Gunakan had \int_2^4 ke dalam *hasil kamiran</p> 4π	K1 K1 N1

6(a)	$\frac{xy}{2}, \frac{xy}{16}, \frac{xy}{128}, \dots$ <p><u>atau</u> mana-mana tiga sebutan berturutan.</p> <p>Dapatkan sekurang-kurangnya dua nisbah bagi</p> $\frac{\frac{xy}{16}}{\frac{xy}{2}}, \frac{\frac{xy}{128}}{\frac{xy}{16}} \quad \text{atau} \quad \text{setara}$ $r = \frac{1}{8}$	<p>P1</p> <p>K1</p> <p>N1</p>
(b)(i)	<p>Gunakan $ar^{n-1} = 6\frac{1}{4}$</p> $* 25600 \left(\frac{1}{4} \right)^{n-1} = 6\frac{1}{4}$ <p><u>atau</u> Senaraikan setiap sebutan sehingga $6\frac{1}{4}$</p> <p>25600, 3200, 400, 50, $6\frac{1}{4}$</p> $n = 5$	<p>K1</p> <p>N1</p>
(ii)	<p>Gunakan $S_{\infty} = \frac{a}{1-r}$</p> $\frac{* 25600}{1 - \frac{1}{8}}, \quad r < 1$ $29257\frac{1}{7}$	<p>K1</p> <p>N1</p>

7 (a)	<table border="1"> <tbody> <tr> <td>y</td> <td>3.3</td> <td>2.4</td> <td>1.8</td> <td>1.5</td> <td>1.3</td> <td>1.1</td> </tr> <tr> <td>xy</td> <td>1.65</td> <td>3.60</td> <td>4.50</td> <td>5.25</td> <td>5.85</td> <td>6.05</td> </tr> </tbody> </table>	y	3.3	2.4	1.8	1.5	1.3	1.1	xy	1.65	3.60	4.50	5.25	5.85	6.05	N1
	y	3.3	2.4	1.8	1.5	1.3	1.1									
xy	1.65	3.60	4.50	5.25	5.85	6.05										
	<p>Plot xy melawan y (paksi betul dan skala seragam)</p> <p>6 * titik ditanda betul .</p> <p>Garis lurus penyuaian terbaik</p>	K1 N1 N1														
(b)	$xy = -by + a$ $a = 8.3$ $-b = \text{*kecerunan}$ $b = -2.0$	P1 N1 K1 N1														
(c)	$\frac{1}{y} = \frac{1}{a}x + \frac{b}{a}$ <p>kecerunan = 0.12</p>	P1 N1														

8(a)(i)	$\frac{1}{2} \begin{vmatrix} 1 & 7 & -3 & 1 \\ 2 & 8 & k & 2 \end{vmatrix} = \pm 24$ $6k + 12 = \pm 48$ $k = 6 \text{ or } k = -10$	K1 K1 N1
(ii)	<p>Menggunakan $m_1 m_2 = -1$</p> $m_2 = -\frac{3}{2}$ $\frac{y-5}{x-4} = \left(-\frac{3}{2}\right)$ $y = -\frac{3}{2}x + 11 \quad \text{atau setara}$	K1 K1 N1
(b)(i)	<p>Menggunakan $AP = \sqrt{10}$</p> $\sqrt{(x-1)^2 + (y-2)^2} = \sqrt{10}$ $x^2 + y^2 - 2x - 4y - 5 = 0$	K1 N1
(ii)	<p>Gantikan titik (4,1) ke dalam * persamaan lokus.</p> <p>Lokus melalui titik (4,1)</p>	K1 N1

