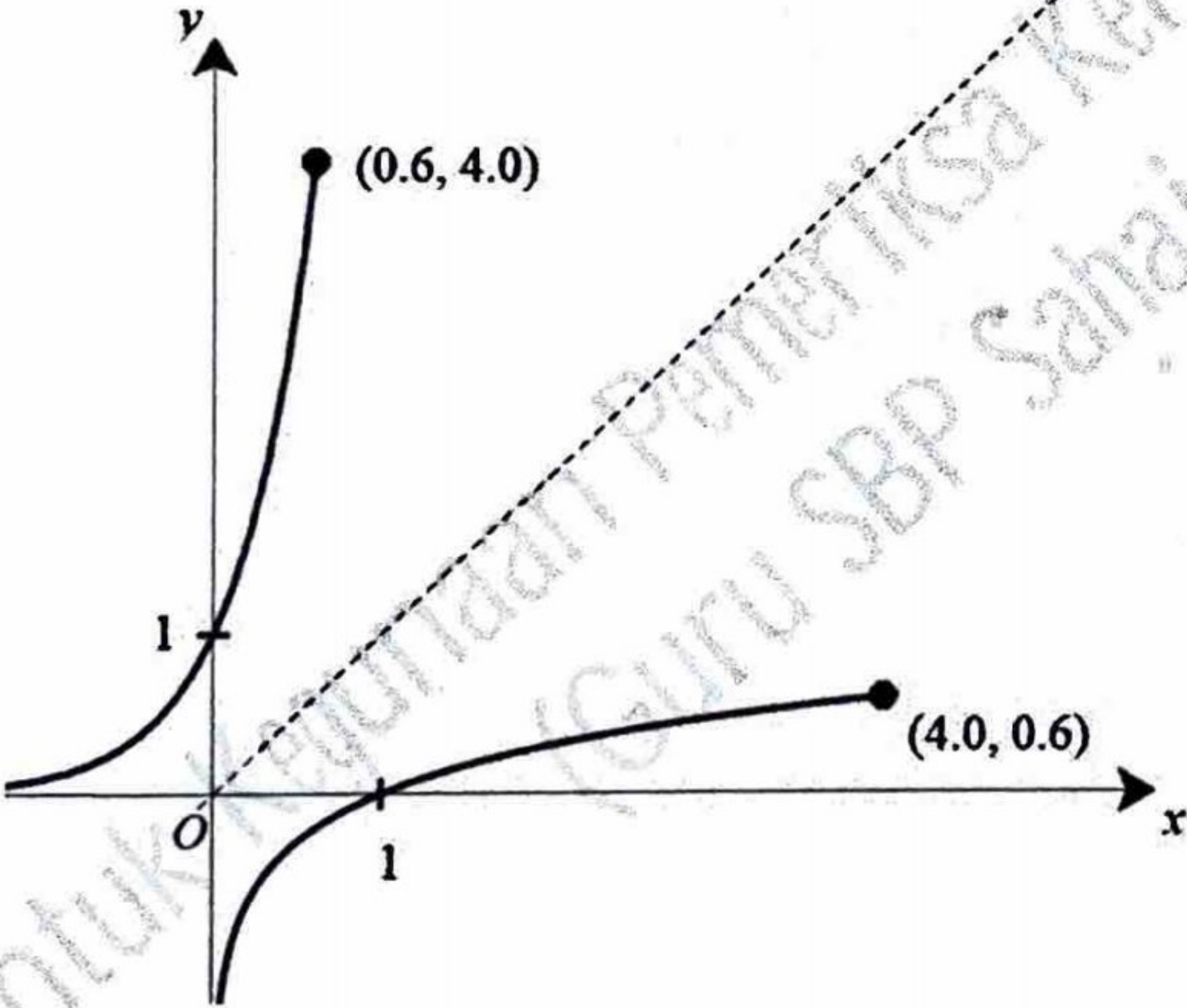
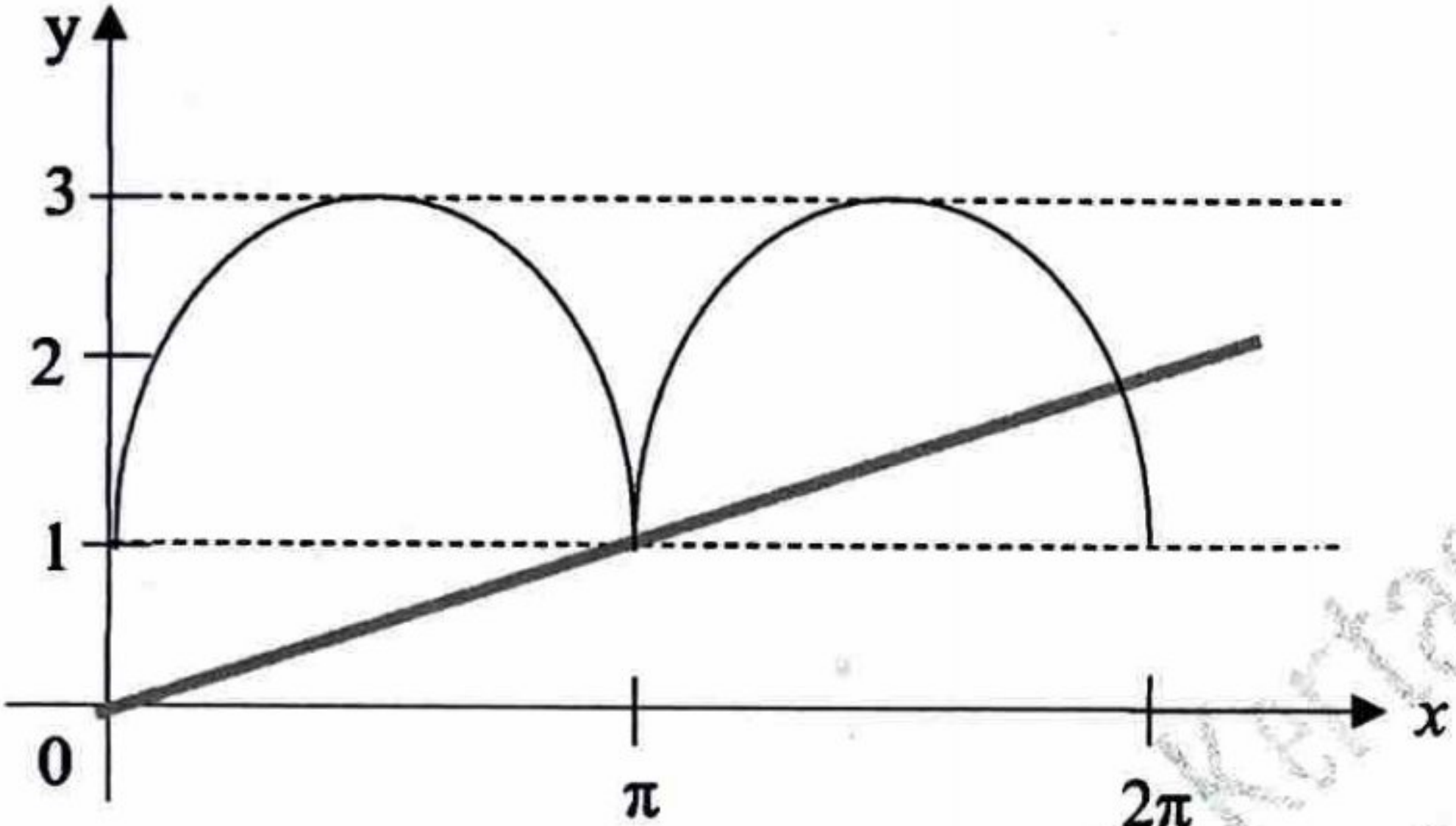


No	Skema Pemarkahan	Sub Markah	Jumlah Markah
1	$A + B + C = 140$ $3A + 5B + 6C = 630$ $2.5A + 4B + 5C = 515$ <p style="text-align: right;"><b>P2, P1, P0</b></p> <p>Hapus anu pertama dengan penggantian atau penghapusan <b>K1</b>                      Hapus anu kedua dengan penggantian atau penghapusan <b>K1</b></p> <p><math>A = 60, B = 30, C = 50</math> <span style="float: right;"><b>N1, N1, N1</b></span></p>	7	7
2(a)(i)	 <p>Bersimetri pada <math>y = x</math> dan melalui titik <math>(1, 0)</math> <b>P1</b></p>	2	
(a)(ii)	$y = \log_a x$ ialah fungsi songsang bagi $y = a^x$ <b>N1</b>		

No	Skema Pemarkahan	Sub Markah	Jumlah Markah
(b)(i)	<p><u>Tukar asas</u></p> $\frac{\log x^2}{\log 9} \quad \mathbf{K1}$ <p><u>Guna hukum kuasa</u></p> $\frac{2 \log x}{2} \quad \mathbf{K1}$ $\log_3 \frac{(3x-1)}{x} \quad \mathbf{N1}$	5	
(b)(ii)	<p><u>Menyelesaikan persamaan</u></p> $\ast \left( \frac{3x-1}{x} \right) = \frac{1}{3} \quad \mathbf{K1}$ $\frac{3}{8} \quad \mathbf{N1}$		7

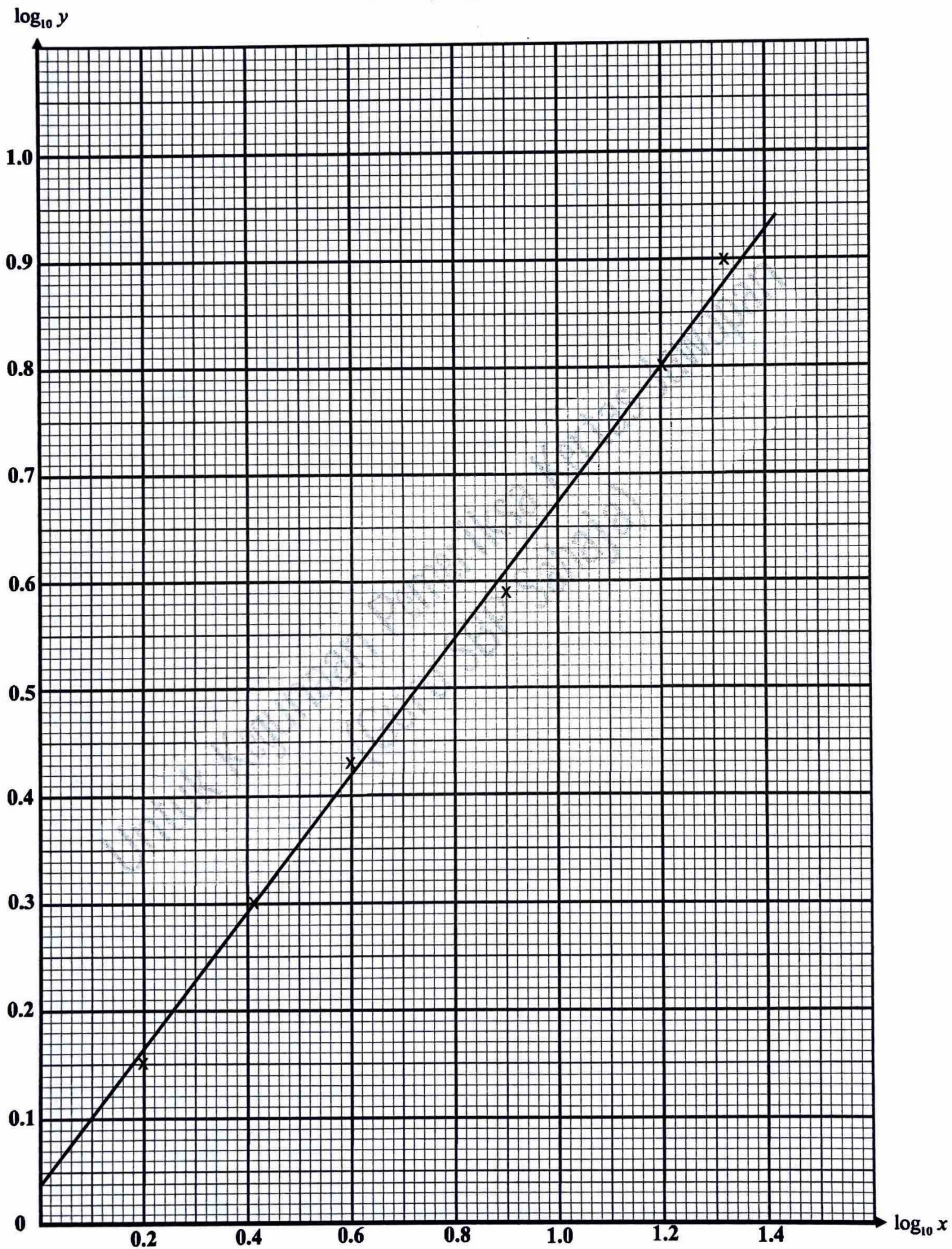
No	Skema Pemarkahan	Sub Markah	Jumlah Markah
3(a)	<p><u>Tulis hukum segi tiga</u></p> <p><math>\overline{PT} = \overline{PR} + \overline{RT} \quad @ \quad \overline{RU} = \overline{RP} + \overline{PU} \quad \text{P1}</math></p> <p><math>\overline{PT} = \underline{x} + \frac{4}{5}(\underline{y} - \underline{x}) \quad @ \quad \overline{RU} = -\underline{x} + 2\left(\frac{\underline{x}}{5} + \frac{4\underline{y}}{5}\right) \quad \text{K1}</math></p> <p><math>\overline{PT} = \frac{\underline{x}}{5} + \frac{4\underline{y}}{5} \quad \text{N1}</math></p> <p><math>\overline{RU} = -\frac{3\underline{x}}{5} + \frac{8\underline{y}}{5} \quad \text{N1}</math></p>	4	
(b)	<p><math>\overline{RQ} = -\frac{3k\underline{x}}{5} + \frac{8k\underline{y}}{5} \quad @ \quad \overline{RQ} = -\underline{x} + h\underline{y} \quad \text{N1}</math></p> <p>Banding *pekali bagi <math>\underline{x}</math> dan <math>\underline{y}</math></p> <p><math>-1 = -\frac{3k}{5} \quad @ \quad h = \frac{8k}{5} \quad \text{K1}</math></p> <p><math>k = \frac{5}{3} \quad \text{dan} \quad h = \frac{8}{3} \quad \text{N1}</math></p>	3	7
4(a)(i)	<p><math>f(x) = a\left(x - \frac{7}{2}\right)^2 + \frac{15}{2} \quad \text{K1}</math></p> <p><math>10 = a\left(0 - \frac{7}{2}\right)^2 + \frac{15}{2} \quad \text{K1}</math></p> <p><math>f(x) = \frac{10}{49}\left(x - \frac{7}{2}\right)^2 + \frac{15}{2} \quad \text{N1}</math></p>	3	
(a)(ii)	<p><math>f(x) = \frac{10}{49}\left(6 - \frac{7}{2}\right)^2 + \frac{15}{2} \quad \text{K1}</math></p> <p>8.776      N1</p> <p>paksi simetri @ <math>x = \frac{7}{2} \quad \text{N1}</math></p>	3	6

No	Skema Pemarkahan	Sub Markah	Jumlah Markah
<p>5(a)(i)</p> <p>(b)(i)</p>	$\frac{1 - (1 - 2\sin^2 x) - 2\sin x \cos x}{\cos x - \sin x}$ <p>1 - 2sin<sup>2</sup> x @ 2sin x kos x (dilihat) K1</p> <p>2sin x N1</p>  <p>Bentuk graf sin N1</p> <p>1 kitaran N1</p> <p>Amplitud (maks 3, min 1) N1</p> <p>Mutlak dan anjakan 1 unit ke atas N1</p> <p><math>y = \frac{x}{\pi}</math> N1</p> <p>Lakar garis lurus <math>y = \frac{x}{\pi}</math> N1</p> <p>Bilangan penyelesaian = 2 N1</p>	<p>2</p> <p>4</p> <p>3</p>	<p>9</p>
<p>6(a)</p> <p>(b)</p>	<p><math>ar + ar^2 = 30</math> OR <math>ar = a - 9</math> K1</p> <p>Selesaikan persamaan serentak K1</p> <p><math>r = \frac{2}{3}</math> N1</p> <p><math>a = 27</math> N1</p> <p><math>27\left(\frac{2}{3}\right)^{n-1} = \frac{150}{81}</math> K1</p> <p><math>n = 6.61</math> N1</p> <p>Bukan integer N1</p>	<p>4</p> <p>3</p>	<p>7</p>

No	Skema Pemarkahan	Sub Markah	Jumlah Markah
7(a)	<p><b>Kaedah 1</b>  <u>Kamir dengan had yang betul</u>  <math display="block">\left[ \frac{(y-4)^3}{3(1)} \right]_4 \quad \text{K1}</math> <u>Guna had yang betul @ Cari luas segi tiga</u>  <math display="block">\frac{1}{3}[(6-4)^3 - (4-4)^3] \quad @ \quad \frac{1}{2}(22-6)(4) \quad \text{K1}</math> <math display="block">\left( \frac{1}{3}[(6-4)^3 - (4-4)^3] \right) + \left( \frac{1}{2}(22-6)(4) \right) \quad \text{K1}</math> <math display="block">34\frac{2}{3} \text{ unit}^2 \quad \text{N1}</math></p> <p><b>Kaedah 2</b>  <u>Kamir dengan had yang betul</u>  <math display="block">\left[ \frac{x^{\frac{3}{2}}}{\frac{3}{2}} + 4x \right]_0^4 \quad \text{K1}</math> <u>Guna had yang betul @ Cari luas trapezium</u>  <math display="block">\left[ \frac{(4)^{\frac{3}{2}}}{\frac{3}{2}} + 4(4) \right] - 0 \quad @ \quad \frac{1}{2}(4)(6+22) \quad \text{K1}</math> <math display="block">\left( \left[ \frac{(4)^{\frac{3}{2}}}{\frac{3}{2}} + 4(4) \right] - 0 \right) - \left( \frac{1}{2}(4)(6+22) \right) \quad \text{K1}</math> <math display="block">34\frac{2}{3} \text{ unit}^2 \quad \text{N1}</math></p>	4	
(b)	<p><u>Kamirkan <math>\int \pi((y-4)^2)^2 dy</math></u>  <math display="block">V = \pi \left( \frac{(y-4)^5}{5(1)} \right) \quad \text{K1}</math> <u>Guna had <math>\int_4^6</math> ke dalam *V</u>  <math display="block">V = \pi \left[ \frac{(6-4)^5}{5} - \frac{(4-4)^5}{5} \right] \quad \text{K1}</math> <math display="block">\frac{32}{5} \pi \quad \text{N1}</math></p>	3	7

No	Skema Pemarkahan	Sub Markah	Jumlah Markah																
8(a)	<table border="1" data-bbox="373 498 1297 658"> <tr> <td><math>\log_{10} x</math></td> <td>0.20</td> <td>0.41</td> <td>0.60</td> <td>0.90</td> <td>1.20</td> <td>1.32</td> <td>N1</td> </tr> <tr> <td><math>\log_{10} y</math></td> <td>0.15</td> <td>0.30</td> <td>0.43</td> <td>0.59</td> <td>0.80</td> <td>0.90</td> <td>N1</td> </tr> </table> <p data-bbox="373 884 1306 1044">                     Paksi betul dan skala seragam bagi garis lurus <b>K1</b>                      Semua titik diplot betul <b>N1</b>                      Garis lurus penyuaian terbaik <b>N1</b> </p>	$\log_{10} x$	0.20	0.41	0.60	0.90	1.20	1.32	N1	$\log_{10} y$	0.15	0.30	0.43	0.59	0.80	0.90	N1	5	
$\log_{10} x$	0.20	0.41	0.60	0.90	1.20	1.32	N1												
$\log_{10} y$	0.15	0.30	0.43	0.59	0.80	0.90	N1												
(b)	$\log_{10} y = -\frac{1}{r} \log_{10} x + \log_{10} s$ <p style="text-align: right;"><b>P1</b></p>	5																	
(i)	<p>Guna <math>*m = -\frac{1}{r}</math></p> $-\frac{1}{r} = \frac{0.80 - 0.30}{1.20 - 0.41}$ <p style="text-align: right;"><b>K1</b></p> $r = -1.58$ <p style="text-align: right;"><b>N1</b></p>																		
(ii)	<p>Guna <math>*c = \log_{10} s</math></p> <p>Syarat: <math>0.03 \leq c \leq 0.04</math></p> $\log_{10} s = 0.04$ <p style="text-align: right;"><b>K1</b></p> $s = 1.096$ <p style="text-align: right;"><b>N1</b></p>																		
			10																

Jawapan untuk Soalan 8  
Answer for Question 8



No	Skema Pemarkahan	Sub Markah	Jumlah Markah
9(a)(i)	$y - (-2) = -1(x - 0)$ @ $-2 = -1(0) + c$ & selesaikan untuk $c$ <b>K1</b>  $y = -x - 2$ <b>N1</b>	2	
(a)(ii)	<u>Mencari kecerunan PQ &amp; guna <math>m_1 \times m_2 = -1</math></u> $m \times \left( \frac{-1 - (-2)}{3 - 0} \right) = -1$ <b>K1</b>  $y - 3 = * - 3(x - (-1))$ @ $-3 = * - 3(-1) + c$ & selesaikan untuk $c$ <b>K1</b>  $y = -3x$ <b>N1</b>	3	
(b)	$\left( \frac{m-1}{2}, \frac{3+n}{2} \right)$ <b>N1</b>	1	
(c)	<u>Guna rumus luas segi tiga</u> $\frac{1}{2}   (-1(-1) + 3(-2) + 0(3)) - (3(3) + (-1)(0) + (-2)(-1))  $ <b>K1</b>  8 <b>N1</b>  4*(8) <b>N1</b>  32 <b>N1</b>	4	
			10



No	Skema Pemarkahan	Sub Markah	Jumlah Markah
10(a)	$2x = 100 - 6y - 2\pi y$ <b>P1</b> $\pi y^2 + 2y(100 - 6y - 2\pi y)$ <b>K1</b> $y(200 - 3\pi y - 12y)$ <b>N1</b>	3	
(b)	$\frac{dL}{dy} = 200 - 24y - 6\pi y$ dan $200 - 24y - 6\pi y = 0$ <b>K1</b> $y = 4.667$ <b>N1</b> $L = 200(4.667) - 12(4.667)^2 - 3\pi(4.667)$ <b>K1</b> $466.72$ <b>N1</b>	4	
(c)	$\frac{dL}{dt} = (200 - 24y - 6\pi y) \times 0.7$ <b>K1</b> $(200 - 24(12) - 6\pi(12)) \times 0.7$ <b>K1</b> $-219.96$ <b>N1</b>	3	10

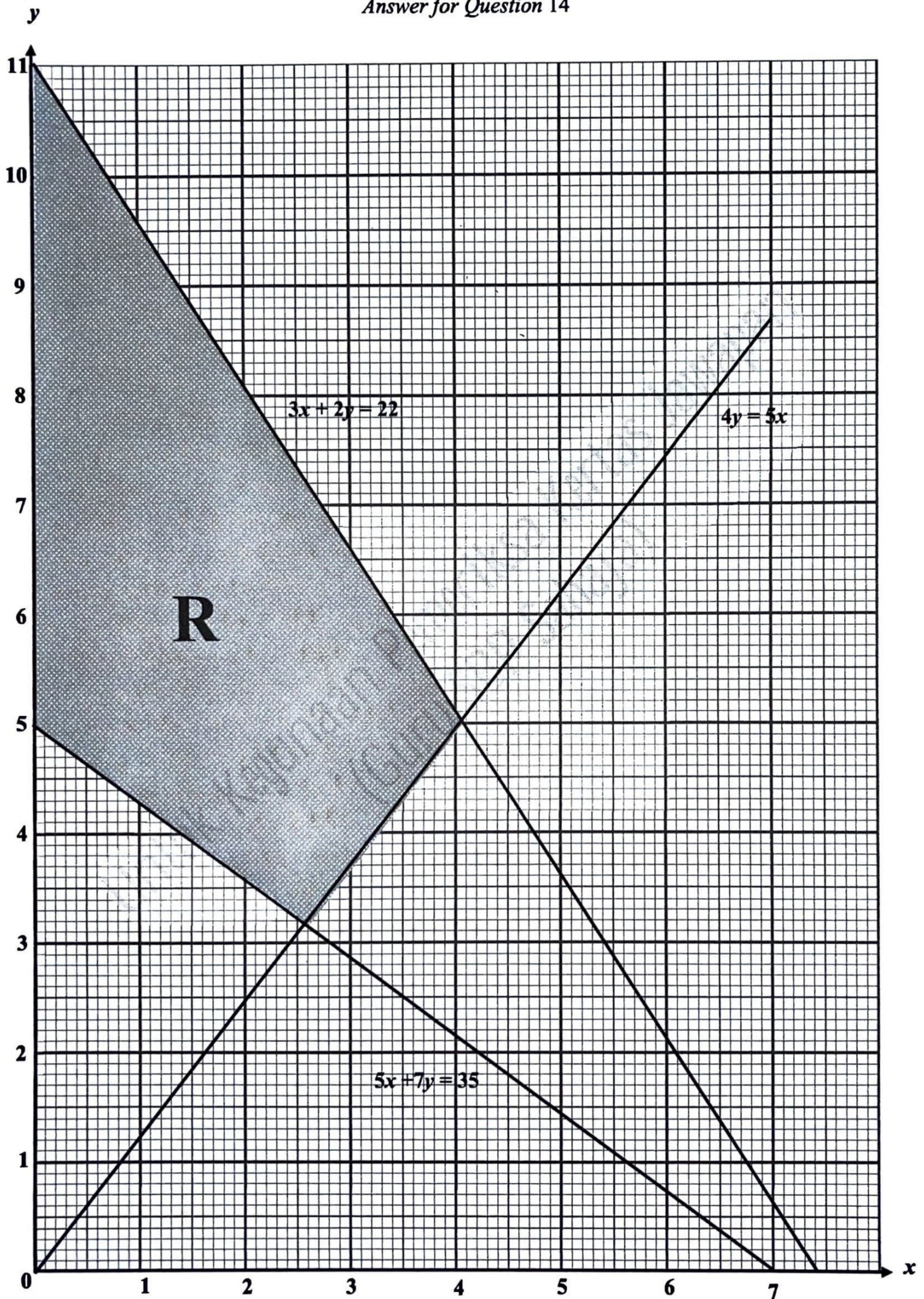
No	Skema Pemarkahan	Sub Markah	Jumlah Markah
11(a)	${}^5C_5(0.9452)^5(0.0548)^0$ <b>K1</b>  0.7544 <b>N1</b>	2	
(b)	$P(X > 2) = P(X = 3) + P(X = 4)$ <b>K1</b>  ${}^4C_3(0.7544)^3(0.2456)^1$ @ ${}^4C_4(0.7544)^4(0.2456)^0$ <b>K1</b>  0.7457 // 0.7456 <b>N1</b>	3	
(c)(i)	$P(Z < \frac{2-1.2}{\sigma}) = 0.9452$ @ $P(Z > \frac{0.8}{\sigma}) = 0.0548$ <b>K1</b>  $\frac{2-1.2}{\sigma} = 1.60$ <b>N1</b>  $\sigma = 0.5$ <b>N1</b>	3	
(c)(ii)	$P(Z > \frac{1.5-1.2}{0.5})$ <b>K1</b>  0.2743 <b>N1</b>	2	10

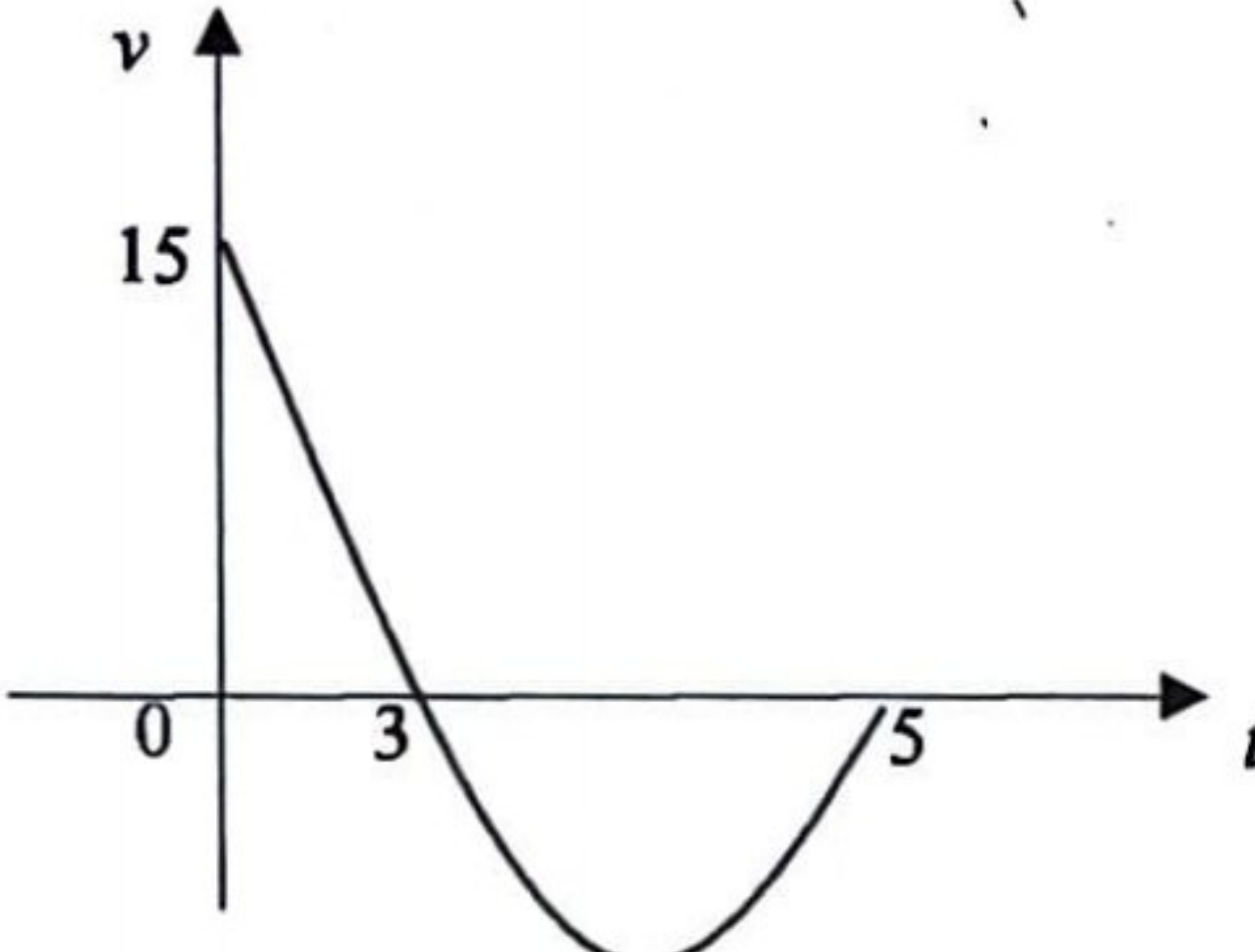
No	Skema Pemarkahan	Sub Markah	Jumlah Markah
12(a)	$x = \frac{6}{4.80} \times 100 \quad @ \quad 109 = \frac{3}{y} \times 100 \quad \mathbf{K1}$ $x = 125 \quad \mathbf{N1}$ $y = 2.75 \quad \mathbf{N1}$	3	
(b)	$\frac{125(150) + 109(150) + 105(100) + 120(m)}{150 + 150 + 100 + m} \quad \mathbf{K1}$ $\frac{125(150) + 109(150) + 105(100) + 120(m)}{150 + 150 + 100 + m} = 116 \quad \mathbf{K1}$ $m = 200 \quad \mathbf{N1}$	3	
(c)	$\frac{116}{100} \times 116 \quad @ \quad \frac{Q_{22}}{11} \times 100 = 116 \quad \mathbf{K1}$ $\frac{x}{11} \times 100 = 134.56 \quad @ \quad \frac{116 \times 12.76}{100} \quad \mathbf{K1}$ $14.80 \quad \mathbf{N1}$ $14.80 \times 1.25$ $18.50 \quad \mathbf{N1}$	4	
			10

No	Skema Pemarkahan	Sub Markah	Jumlah Markah
13(a)	$(\sqrt{m})^2 = (21)^2 + (19.5)^2 - 2(21)(19.5)\cos 64$ <b>K1</b>  462.22 <b>N1</b>	2	
(b)	$\frac{\sin \angle RSQ}{19.5} = \frac{\sin 64}{21.50}$ <b>K1</b>  54.61 <b>N1</b>	2	
(c)	$ST^2 = 12^2 + 5^2$ @ $QT^2 = 10^2 + 5^2$ <b>K1</b>  <b>Kaedah 1</b> <u>Guna rumus luas</u>  $\sqrt{462.22} = (13)^2 + (11.18)^2 - 2(13)(11.18)\cos \angle STQ$ <b>K1</b>  $\frac{1}{2}(13)(11.18)\sin 125.37$ <b>K1</b>  59.26 <b>N1</b>  <b>Kaedah 2</b> <u>Guna rumus Heron</u>  $s = \frac{13 + 11.18 + 21.50}{2}$ <b>P1</b>  $\sqrt{(22.84^*)(22.84^* - 13)(22.84^* - 11.18)(22.84^* - 21.50)}$ <b>K1</b>  59.26 <b>N1</b>	4	
(d)	$\frac{1}{2}(h)(21.50) = 59.26$ <b>K1</b>  5.513 <b>N1</b>	2	
			<b>10</b>

No	Skema Pemarkahan	Sub Markah	Jumlah Markah
14(a)	I : $45x + 30y \leq 330$ N1 II : $50x + 70y \geq 350$ N1 III: $y \geq \frac{5}{4}x$ N1	3	
(b)	Lukis sekurang-kurangnya satu garis lurus dengan betul      K1 Lukis semua garis lurus dengan betul                              N1 Lorek rantau dengan betul    N1	3	
(c)(i)	$4 \leq y \leq 6$ N1	1	
(c)(ii)	$(4,5)$ P1 $16(4) + 10(5)$ K1 RM114                                      N1	3	
			10

Jawapan untuk Soalan 14  
Answer for Question 14



No	Skema Pemarkahan	Sub Markah	Jumlah Markah
15(a)(i)	Ganti dan samakan dengan 4 $2(6) - p = 4$ <b>K1</b> $p = 8$ <b>N1</b>	2	
(a)(ii)	$(t-3)(t-5) = 0$ <b>K1</b> $t = 3$ $t = 5$ <b>N1</b>	2	
(b)	<div style="text-align: center;">  </div> <p>Bentuk      <b>N1</b>                      Titik persilangan (0,15), (3,0) dan (5,0)      <b>N1</b></p> <p><u>Kamir dengan had yang betul</u></p> $\int_0^3 t^2 - 8t + 15 dt \quad @ \quad \int_3^5 t^2 - 8t + 15 dt \quad \text{K1}$ $\left[ \frac{t^3}{3} - \frac{8t^2}{2} + 15t \right]_0^3 \quad @ \quad \left[ \frac{t^3}{3} - \frac{8t^2}{2} + 15t \right]_3^5$ <p><u>Guna nilai had yang betul</u></p> $\left[ \frac{(3)^3}{3} - \frac{8(3)^2}{2} + 15(3) \right] - \left[ \frac{(0)^3}{3} - \frac{8(0)^2}{2} + 15(0) \right] \quad @$ $\left[ \frac{(5)^3}{3} - \frac{8(5)^2}{2} + 15(5) \right] - \left[ \frac{(3)^3}{3} - \frac{8(3)^2}{2} + 15(3) \right] \quad \text{K1}$ $18 + \left  -\frac{4}{3} \right  \quad \text{K1}$ $\frac{58}{3} \quad \text{N1}$	6	
<b>PERATURAN PEMARKAHAN TAMAT</b>			<b>10</b>