



**MODUL PINTAS  
TINGKATAN 5**

**1449/2**

**MATEMATIK  
Kertas 2**

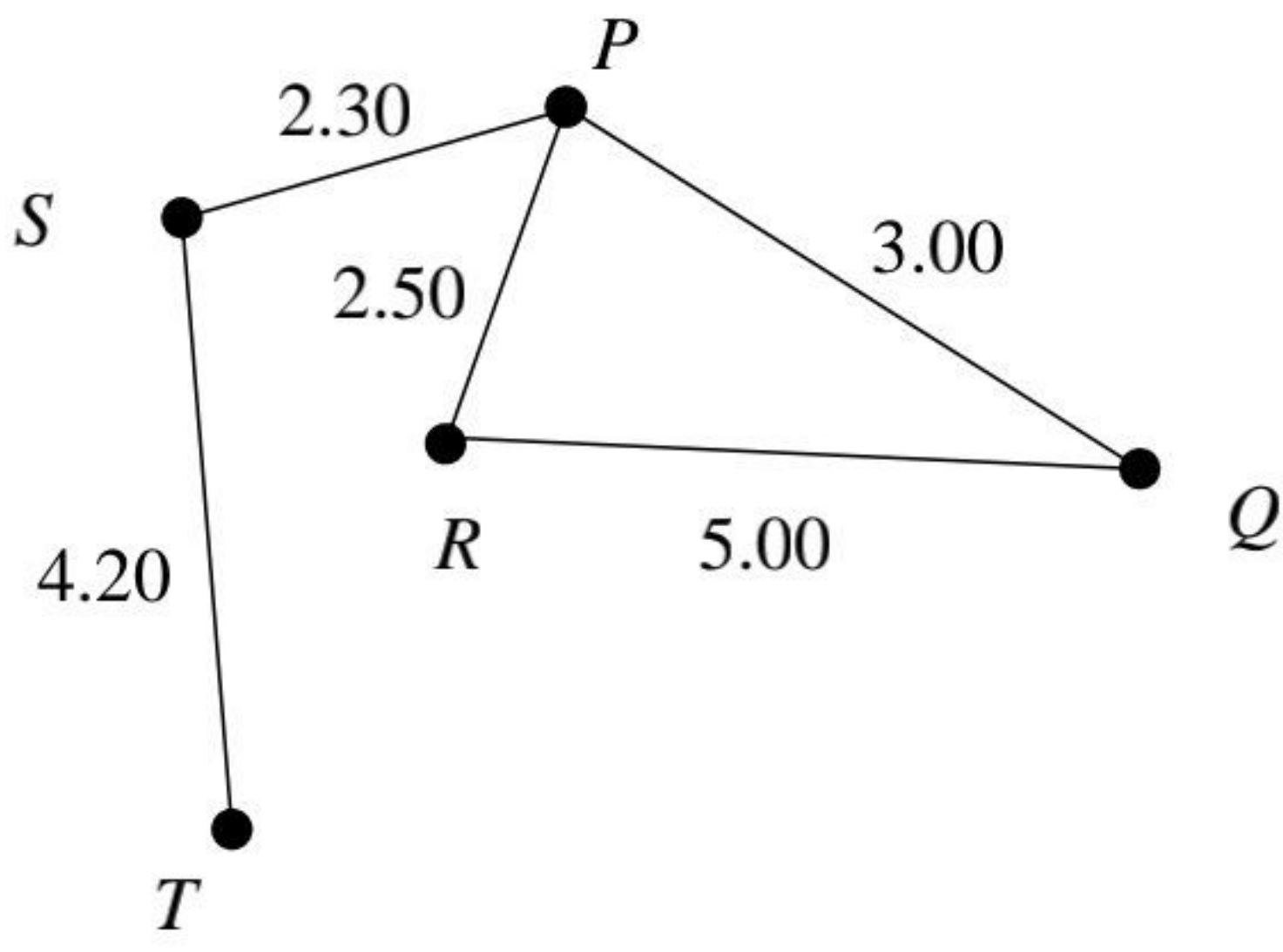
$2\frac{1}{2}$  jam

Dua jam tiga puluh minit

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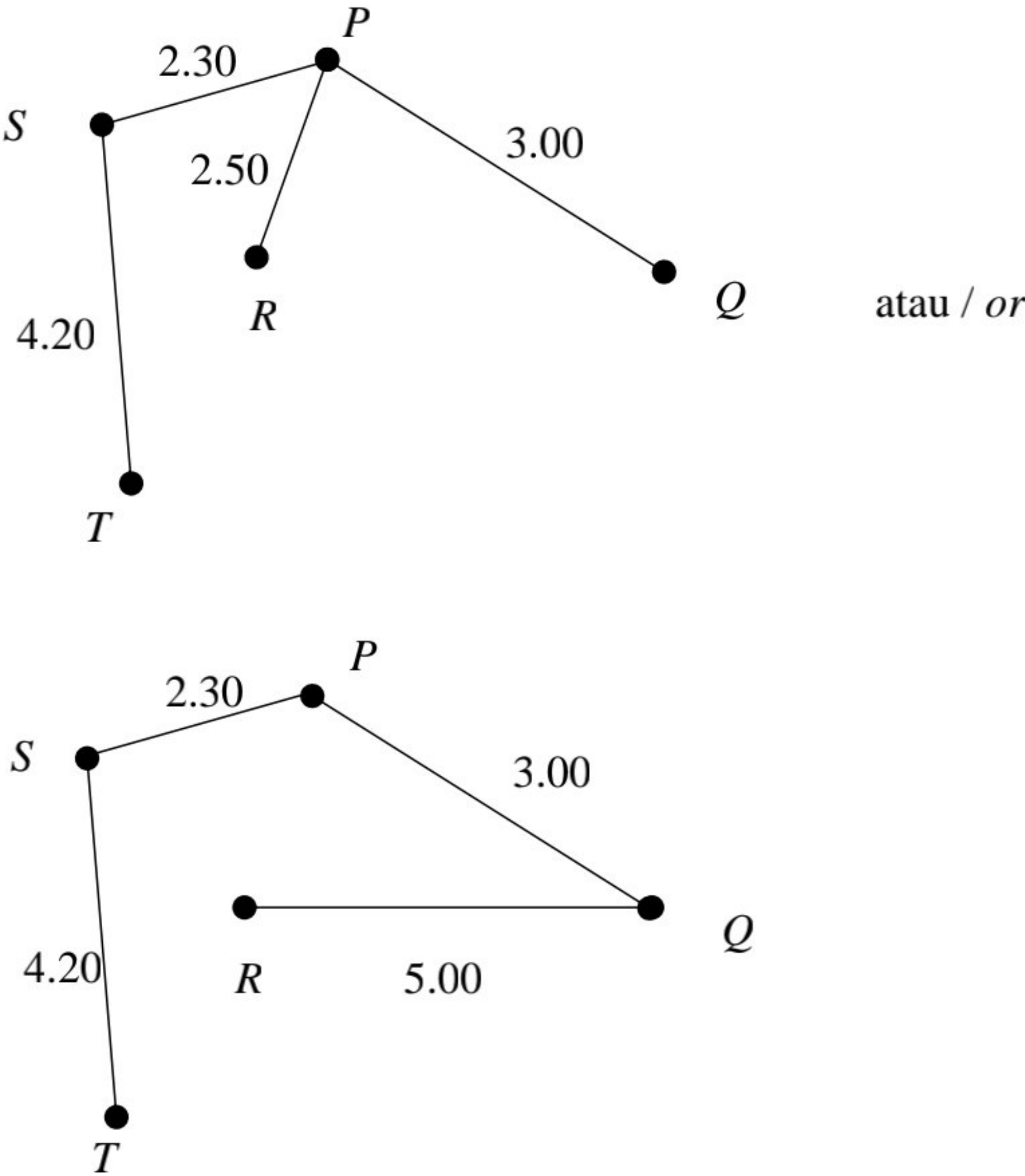
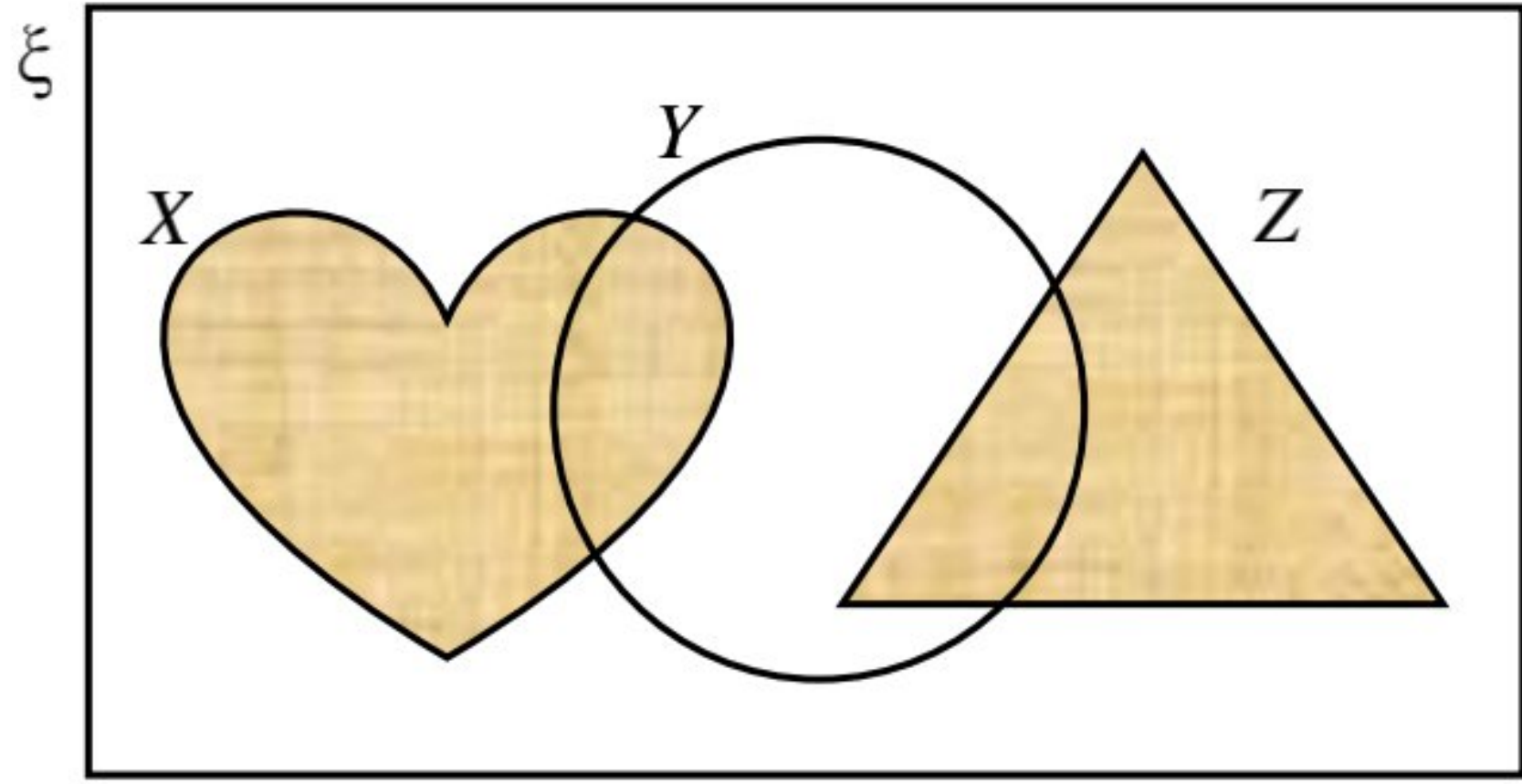
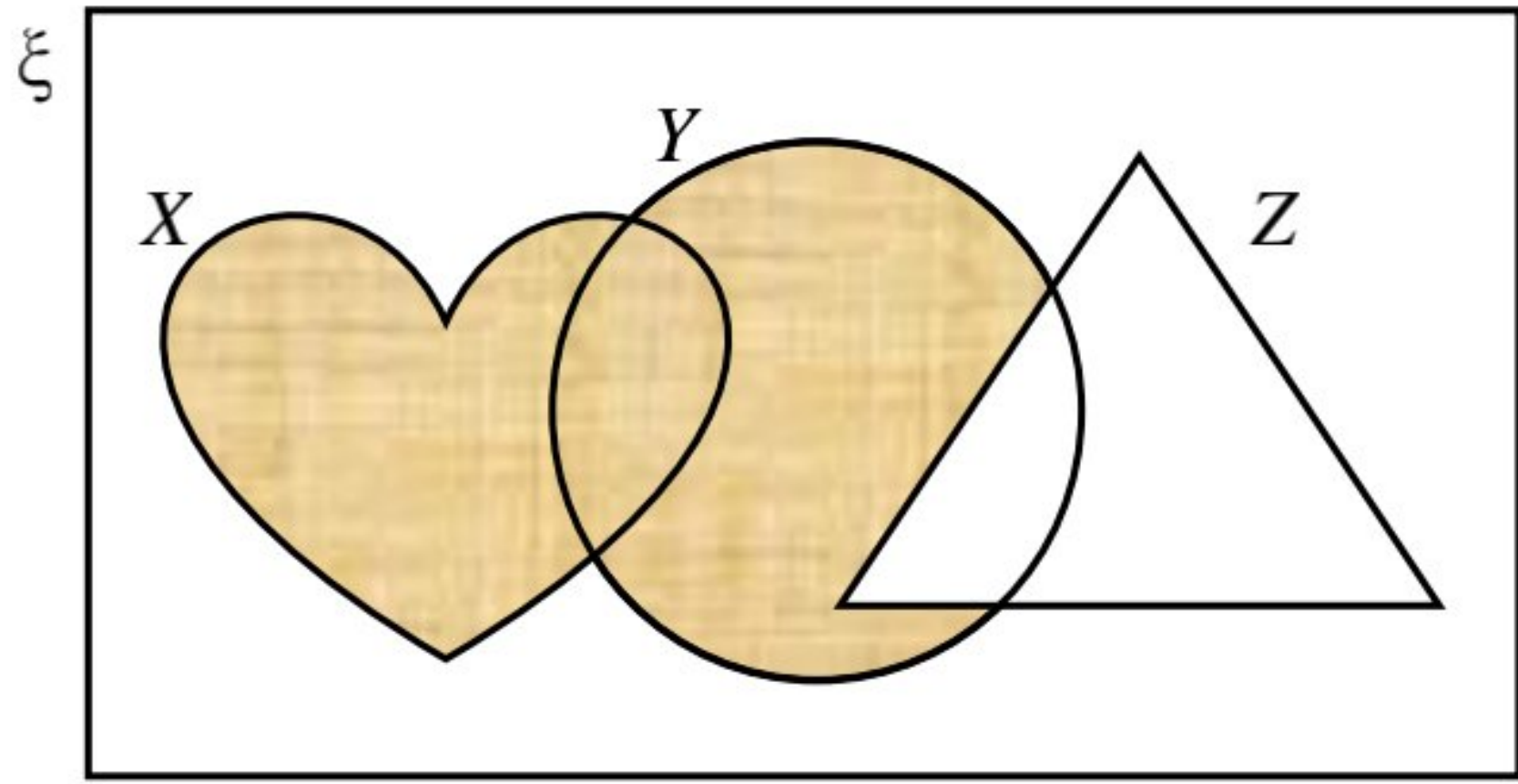
**PERATURAN PEMARKAHAN  
MATEMATIK K2**

**1449/2**

Soalan Question		Cadangan Jawapan Suggested Answers	Markah Marks	Jumlah Total
1	(a)	$x = \frac{1}{2}$	1	3
	(b)	$f\left(\frac{1}{2}\right) = \left(\frac{1}{2}\right)^2 - \frac{1}{2} - 6$ : atau/or $-\frac{25}{4}$	1	
		Titik minimum / Minimum point = $\left(\frac{1}{2}, -\frac{25}{4}\right)$	1	
2	(a)	Jika $2a < 6$ , maka $8 - 2a < 18$ If $2a < 6$ , then $8 - 2a < 18$  Benar/True	1  1	4
	(b)	Hujah ini lemah dan tidak meyakinkan. The argument is weak and not cogent.  kerana premis adalah benar tetapi kesimpulan adalah palsu because the premises is true but conclusion is false.	1  1	
3	(a)	 <p>Nota / Note:</p> <ol style="list-style-type: none"> <li>Terima jawapan yang setara Accept the equivalent answer</li> <li>Graf terarah dilukis, beri 0 markah Directed graph drawn, award 0 mark</li> <li>Graf tak terarah dan tanpa pemberat dilihat, beri 1 markah Undirected and unweighted graph seen, award 1 mark</li> </ol>	2	3

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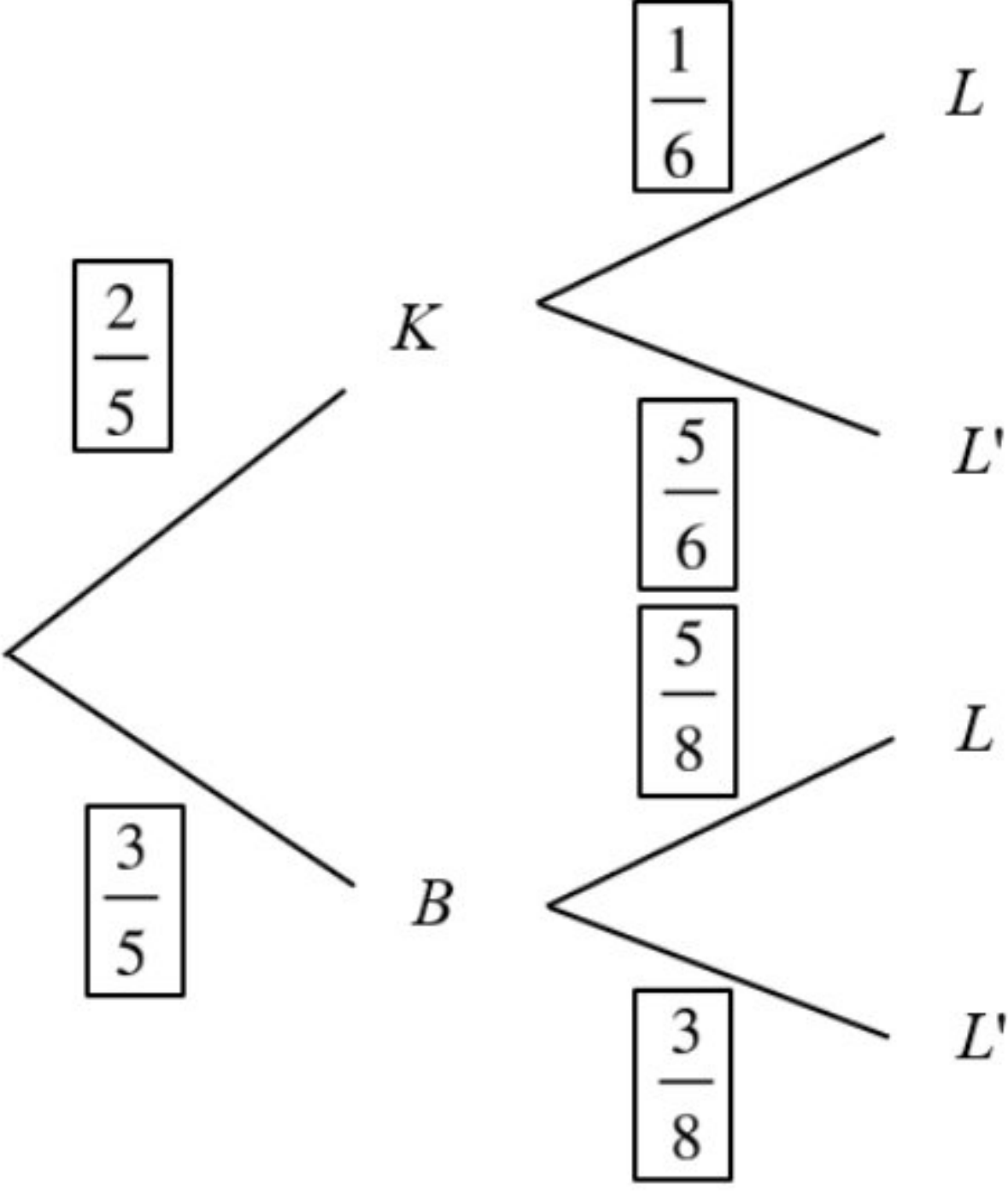
Soalan Question	Cadangan Jawapan Suggested Answers	Markah Marks	Jumlah Total
3	<p>(b)</p> 	1	3
4	<p>(a) <math>4x + 4 + 2 + 10 = 4x + 2x</math> atau setara / or equivalent  <math>x = 8</math></p> <p>(b)(i) <math>X \cup Z</math></p>  <p>(ii) <math>X \cup (Y \cap Z')</math></p>  <p>Nota: <math>(Y \cap Z')</math> dilihat beri 1 markah.  Note: <math>(Y \cap Z')</math> seen award 1 mark.</p>	1  1  2	5



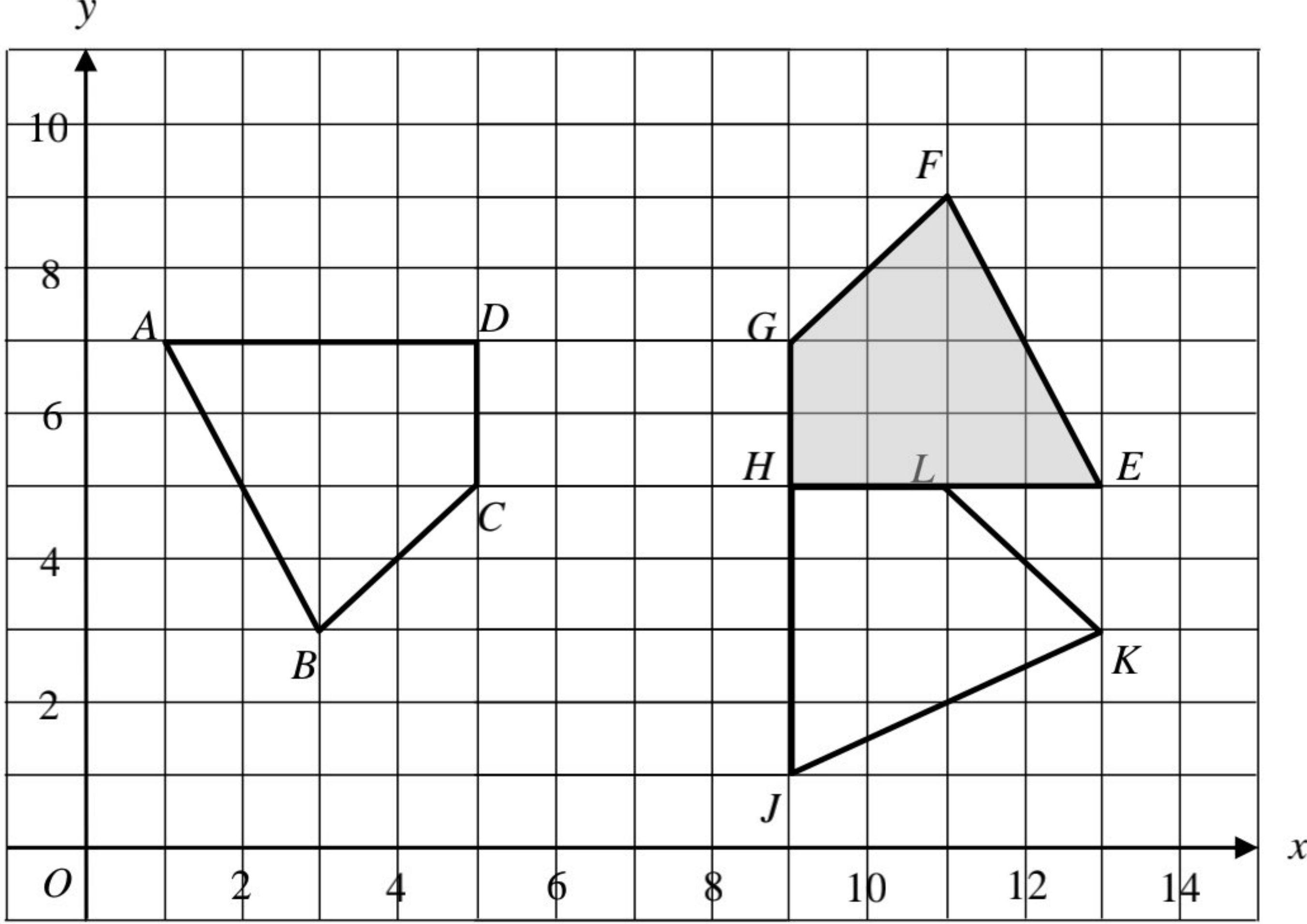
Soalan Question	Cadangan Jawapan Suggested Answers	Markah Marks	Jumlah Total
5	<p>6 000 – 2 480 – 2 900 atau / or 620</p> <p><math>\frac{10}{100} \times 50\,000</math> atau / or 5 000</p> <p>RM620 × 6 atau / or RM 3720</p> <p>Tidak capai kerana jumlah wang yang dikutip dalam masa 6 bulan kurang daripada 5 000 atau setara.</p> <p><i>Cannot achieve because total amount of money collected within 6 months less than 5 000 or equivalent.</i></p> <p>Catatan: Jawapan akhir mesti dengan justifikasi untuk 1 markah.</p> <p><i>Remarks: Final answer must be with justification for 1 mark.</i></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p><b>4</b></p>
6	<p>(a)</p> <p><math>150 = \frac{k(2000)}{20}</math></p> <p><math>k = 1.5</math> atau / or <math>\frac{3}{2}</math></p> <p><math>t = \frac{1.5c}{p}</math> atau / or <math>t = \frac{3c}{2p}</math></p> <p>(b)</p> <p><math>90 = \frac{1.5(840)}{p}</math> atau / or <math>90 = \frac{3(840)}{2p}</math> atau setara / or equivalent</p> <p><math>p = 14</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p><b>5</b></p>
7	<p><math>\frac{180\,000}{1\,000} \times 1.63 + \frac{35}{100} \times \frac{180\,000}{1\,000} \times 1.75</math></p> <p>atau setara / or equivalent</p> <p>403.65</p> <p>Nota /Note :</p> <p><math>\frac{180\,000}{1\,000} \times 1.63</math> atau /or <math>\frac{35}{100} \times \frac{180\,000}{1\,000} \times 1.75</math></p> <p>atau setara beri 1 markah / or equivalent award 1 mark</p>	<p>2</p> <p>1</p>	<p><b>3</b></p>

Soalan Question		Cadangan Jawapan Suggested Answers	Markah Marks	Jumlah Total
8	(a)	8	1	4
	(b)(i)	$\frac{q-17}{\left(\frac{24-14}{60}\right)} = 72$ atau setara / or equivalent	1	
		29	1	
	(b)(ii)	Taksi bergerak sejauh 12 km dengan kelajuan 72 km j <sup>-1</sup> bagi tempoh 10 minit terakhir atau setara.  <i>The taxi travels for 12 km with a speed of 72 km h<sup>-1</sup> for the last 10 minutes or equivalent.</i>	1	
9	(a)	(-2, 1)	1	4
	(b)	$\frac{2-1}{0-(-2)}$ atau / or $\frac{1}{2}$ atau setara / or equivalent	1	
		$1 = \frac{1}{2}(-7) + c$ atau setara / or equivalent	1	
		$y = \frac{1}{2}x + \frac{9}{2}$ atau setara/or equivalent	1	
10	(a)	$t = \sqrt{25^2 - 7^2}$	1	5
		24	1	
	(b)	$\frac{1}{3} \times \frac{22}{7} \times 7^2 \times 24 + \frac{22}{7} \times 7^2 \times t = 4\ 312$	2	
		Nota/ Note:  $\frac{1}{3} \times \frac{22}{7} \times 7^2 \times 24$ atau/or $\frac{22}{7} \times 7^2 \times t$  dilihat beri 1 markah. <i>seen award 1 mark.</i>		
		$t = 20$	1	



Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
11 (a)	 <p data-bbox="466 1050 1283 1282"> <math>\frac{2}{5}</math> dan/and <math>\frac{1}{6}</math> dan/ and <math>\frac{5}{6}</math> atau setara / or equivalent  <math>\frac{3}{5}</math> dan/and <math>\frac{5}{8}</math> dan/and <math>\frac{3}{8}</math> atau setara / or equivalent </p>	1  1	
(b)	<p data-bbox="466 1347 663 1448">(i) <math>\left(\frac{2}{5} \times \frac{1}{6}\right)</math></p> <p data-bbox="520 1495 571 1596"><math>\frac{1}{15}</math></p> <p data-bbox="466 1626 863 1727">(ii) <math>\left(\frac{2}{5} \times \frac{1}{6}\right) + \left(\frac{3}{5} \times \frac{5}{8}\right)</math></p> <p data-bbox="520 1834 596 1935"><math>\frac{53}{120}</math></p> <p data-bbox="466 2041 663 2142">(iii) <math>1 - \frac{53}{120}</math></p> <p data-bbox="520 2160 596 2261"><math>\frac{67}{120}</math></p>	1  1  1  1	

8

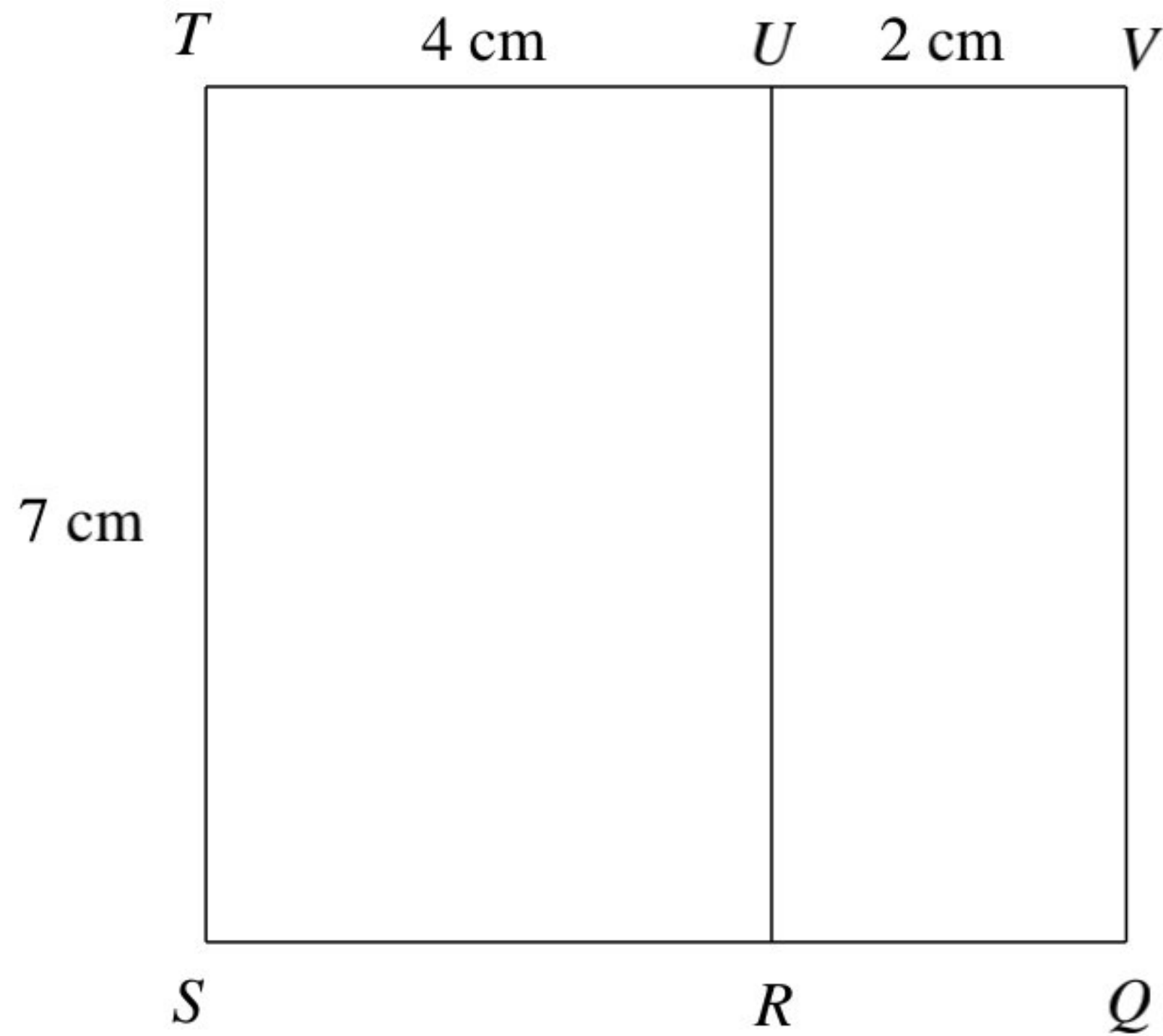
Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
12	<p>(a) (i) <math>(4, 0)</math></p> <p>(ii) <math>P - (-2, 0)</math></p> <p><math>R - (1, -3)</math></p> <p>(b) (i) <math>V</math> - Putaran <math>90^\circ</math> lawan arah jam pada pusat <math>(8,8)</math>  <i>anti-clockwise rotation of <math>90^\circ</math> about the centre <math>(8,8)</math></i></p> <p>Nota / Note:</p> <ol style="list-style-type: none"> <li>Putaran <math>90^\circ</math> pada pusat <math>(8,8)</math> dilihat, beri 2 markah  <i>Rotation about the centre <math>(8,8)</math> seen, award 2 marks</i></li> <li>Putaran <math>90^\circ</math> lawan arah jam, beri 2 markah  <i>Anti-clockwise rotation of <math>90^\circ</math> seen, award 2 marks</i></li> <li>Putaran, dilihat, beri 1 markah  <i>Rotation seen, award 1 mark</i></li> </ol> <p>(b) (ii)</p>  <p>Imej dilukis betul  <i>Correct image drawn</i></p> <p>(ii) <math>W</math> – Putaran <math>180^\circ</math> pada pusat <math>(7,6)</math>  <i>Rotation of <math>180^\circ</math> about the centre <math>(7,6)</math></i></p> <p>Nota / Note:</p> <ol style="list-style-type: none"> <li>Putaran, dilihat, beri 1 markah  <i>Rotation, seen 1 mark</i></li> </ol>	<p>1</p> <p>1</p> <p>1</p> <p>3</p> <p>1</p> <p>2</p>	<p>9</p>



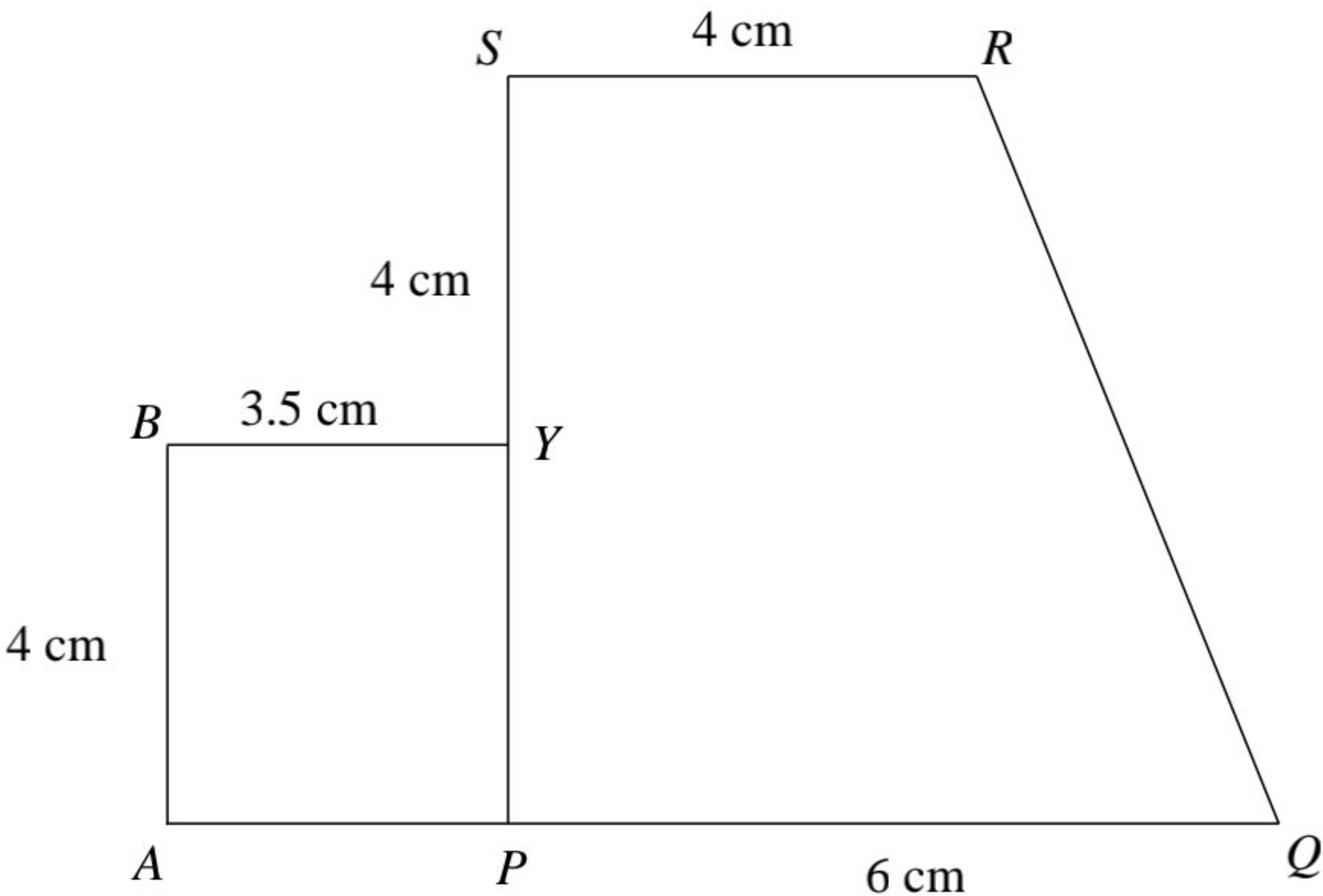
Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
13	<p>(a) <math display="block">\frac{(1 \times 18) + (3 \times 33) + (8 \times 48) + (13 \times 63) + (9 \times 78) + (6 \times 93)}{40}</math></p> <p>atau setara /or equivalent</p> $\sqrt{\frac{(1 \times 18^2) + (3 \times 33^2) + (8 \times 48^2) + (13 \times 63^2) + (9 \times 78^2) + (6 \times 93^2)}{40}} - 64.5^2$ <p>atau setara / or equivalent</p> <p>*5 atau 4 data betul beri 1 markah *5 or 4 data correct award 1 mark</p> <p>18.61</p> <p>(b) kekerapan longgokan atau sempadan atas yang betul. correct cumulative frequency or upper boundaries.</p> <p>Paksi dilukis dengan arah yang betul dan skala seragam bagi <math>10.5 \leq x \leq 100.5</math> dan <math>0 \leq y \leq 40</math>. Axes are drawn in correct direction and uniform scale for <math>10.5 \leq x \leq 100.5</math> and <math>0 \leq y \leq 40</math>.</p> <p>*6 titik di plot dengan betul. *6 points are plotted correctly</p> <p>Nota/ Note :</p> <p>5 atau 4 titik di plot dengan betul, beri 1 markah. 5 or 4 points are plotted correctly award 1 mark</p> <p>Lengkungan licin dan berterusan tanpa garis lurus dan melalui 6 titik yang betul bagi <math>10.5 \leq x \leq 100.5</math> dan <math>0 \leq y \leq 40</math>. Smooth and continuous curve passing through 6 points using correct scale <math>10.5 \leq x \leq 100.5</math> and <math>0 \leq y \leq 40</math>.</p>	<p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p>	<p>9</p>



Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total						
14	<p>(a)</p> <table border="1" data-bbox="464 379 915 537"> <tr> <td><math>x</math></td> <td>-1.5</td> <td>2</td> </tr> <tr> <td><math>y</math></td> <td>-1.5</td> <td>16</td> </tr> </table> <p>(b) Kedua-dua paksi dilukis dalam arah yang betul dengan skala seragam untuk <math>-4 \leq x \leq 3</math> dan <math>-5 \leq y \leq 35</math>. <i>Both are drawn in correct direction with uniform scale for <math>-4 \leq x \leq 3</math> and <math>-5 \leq y \leq 35</math></i></p> <p>*9 titik di plot dengan betul. <i>* 9 points are plotted correctly</i></p> <p>Nota/ Note :</p> <p>8 atau 7 titik di plot dengan betul, beri 1 markah. <i>8 or 7 points plotted correctly award 1 mark</i></p> <p>Graf yang licin dan melalui semua titik. <i>Smooth graph and continuous curve passing through all points.</i></p> <p>(c) (i) <math>-3.7 \leq x \leq -3.5</math> <math>2.3 \leq x \leq 2.5</math></p> <p>(ii) <math>-3.5 \leq y \leq -4.5</math></p>	$x$	-1.5	2	$y$	-1.5	16	<p>1, 1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p><b>9</b></p>
$x$	-1.5	2							
$y$	-1.5	16							

Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
15 (a)	 <p data-bbox="464 1006 1524 1101">Bentuk betul bagi segi empat <math>STVQ</math> dan <math>RQVU</math>. Semua garisan padu. <i>Correct shape of rectangle <math>STVQ</math> and <math>RQVU</math>. All solid lines.</i></p> <p data-bbox="464 1151 783 1196"><math>TS &gt; SQ &gt; SR &gt; RQ</math></p> <p data-bbox="464 1228 1640 1323">Ukuran betul kepada <math>\pm 0.2</math> cm (sehala) dan semua sudut pada bucu <math>90^\circ \pm 1^\circ</math>. <i>Measurement corrects to <math>\pm 0.2</math> cm and all angle at the vertices <math>90^\circ \pm 1^\circ</math>.</i></p>	<p data-bbox="1751 1035 1770 1080">1</p> <p data-bbox="1751 1151 1770 1196">1</p> <p data-bbox="1751 1243 1770 1288">1</p>	



Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
15 (b)	<p>(i)</p>  <p>Bentuk betul bagi trapezium <math>PQRS</math> dan segi empat tepat <math>APYB</math>. Semua garisan padu . <i>Correct shape of trapezium <math>PQRS</math> and rectangle <math>APYB</math>. All solid lines.</i></p> <p><math>AQ &gt; PS &gt; PQ &gt; PY = YS = SR &gt; BY</math></p> <p>Ukuran betul kepada <math>\pm 0.2</math> cm (sehala) dan semua sudut pada bucu <math>90^\circ \pm 1^\circ</math>. <i>Measurement correct to <math>\pm 0.2</math> cm and all angle at the vertices <math>90^\circ \pm 1^\circ</math>.</i></p>	1      1  2	
	<p>(ii)</p> $\frac{1}{2} \times 2 \times \frac{22}{7} \times 3.5^2 \quad \text{atau /or} \quad \frac{1}{2} \times 2 \times \frac{22}{7} \times 3.5 \times 4$ <p>atau setara/or equivalent</p> $\frac{1}{2} \times 2 \times \frac{22}{7} \times 3.5^2 + \frac{1}{2} \times 2 \times \frac{22}{7} \times 3.5 \times 4 \quad \text{atau setara / or equivalent}$ <p>82.5 atau setara / or equivalent</p>	1   1  1	10

Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
16	<p>(a)</p> <p>(i) <math>35K + 45L = 890</math> atau setara / <i>or equivalent</i></p> <p>atau /<i>or</i></p> <p><math>70K + 30L = 1\ 060</math> atau setara / <i>or equivalent</i></p> $\begin{bmatrix} 35 & 45 \\ 70 & 30 \end{bmatrix} \begin{bmatrix} K \\ L \end{bmatrix} = \begin{bmatrix} 890 \\ 1060 \end{bmatrix}$ $\begin{bmatrix} K \\ L \end{bmatrix} = \frac{1}{(35 \times 30) - (45 \times 70)} \begin{bmatrix} 30 & -45 \\ -70 & 35 \end{bmatrix} \begin{bmatrix} 890 \\ 1\ 060 \end{bmatrix}$ <p><math>K = 10</math></p> <p><math>L = 12</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	
	<p>(b)</p> <p>(i) <math>x + y \leq 20</math></p> <p><math>x \geq 2y</math></p> <p>(ii)</p> <div data-bbox="886 1252 1436 1834" data-label="Figure"> </div> <p>Nota / <i>Note</i> :</p> <p>Garis lurus /<i>straight line</i> <math>x + y \leq 20</math></p> <p>Garis lurus /<i>straight line</i> <math>x \geq 2y</math></p> <p>Paksi dilukis dengan arah yang betul dan skala yang seragam. <i>Axes are drawn in correct direction and uniform scale.</i></p> <p>Lorek dalam kawasan yang betul <i>Shade in the correct region</i></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	



Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
16	<p>(c) <math>(2.40 \times 8000)</math> atau / or <math>(2 \times 150)</math> atau/or <math>(2.60 \times 8000)</math> atau/ or</p> $\left(\frac{3.8}{100} \times 2.60 \times 8000\right) \text{ atau /or } \left(\frac{3.5}{100} \times 2.40 \times 8000\right)$ <p><math>21\,400 - (2.40 \times 8000) + (2 \times 150) + \left(\frac{3.5}{100} \times 2.40 \times 8000\right)</math></p> <p>atau / or</p> $23\,200 - (2.60 \times 8000) + (250) + \left(\frac{3.8}{100} \times 2.60 \times 8000\right)$ <p>RM3 172 <b>dan/and</b> RM 3440.40</p> <p>Kencana Maju memberikan nilai pulangan yang lebih tinggi. <i>Kencana Maju gave the higher return on investment.</i></p> <p>Nota/Note:</p> <p>1 markah diberi pada salah satu pengiraan Pelaburan Megah Holding atau Kencana Maju. <i>Award 1 mark for either calculation on investment of Megah Holding or Kencana Maju.</i></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>15</p>
17	<p>(a) (i) <math>(1 \times 9^5) + (0 \times 9^4) + (1 \times 9^3) + (2 \times 9^2) + (6 \times 9^1) + (6 \times 9^0)</math> atau/or RM60 000</p> <p>(ii) <math>(2 \times 7^5) + (2 \times 7^4) + (4 \times 7^3) + (4 \times 7^2) + (2 \times 7^1) + (2 \times 7^0)</math></p> <p><u>atau / or</u></p> $(1 \times 9^5) + (0 \times 9^4) + (1 \times 9^3) + (2 \times 9^2) + (6 \times 9^1) + (6 \times 9^0)$ <p>RM40 000 <b>dan/and</b> RM60 000</p> <p>Traktor B / <i>Tractor B</i></p> <p>(b) (i) <math>60x^2 \times 0.05 = 300</math> atau setara / or equivalent</p> <p><math>x = 10</math></p> <p>(ii) <math>(RM1\,150 \times 12)</math> atau / or RM13 800</p> $\frac{759}{13800} \times 100\% \text{ atau setara / or equivalent}$ <p>5.5%</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	

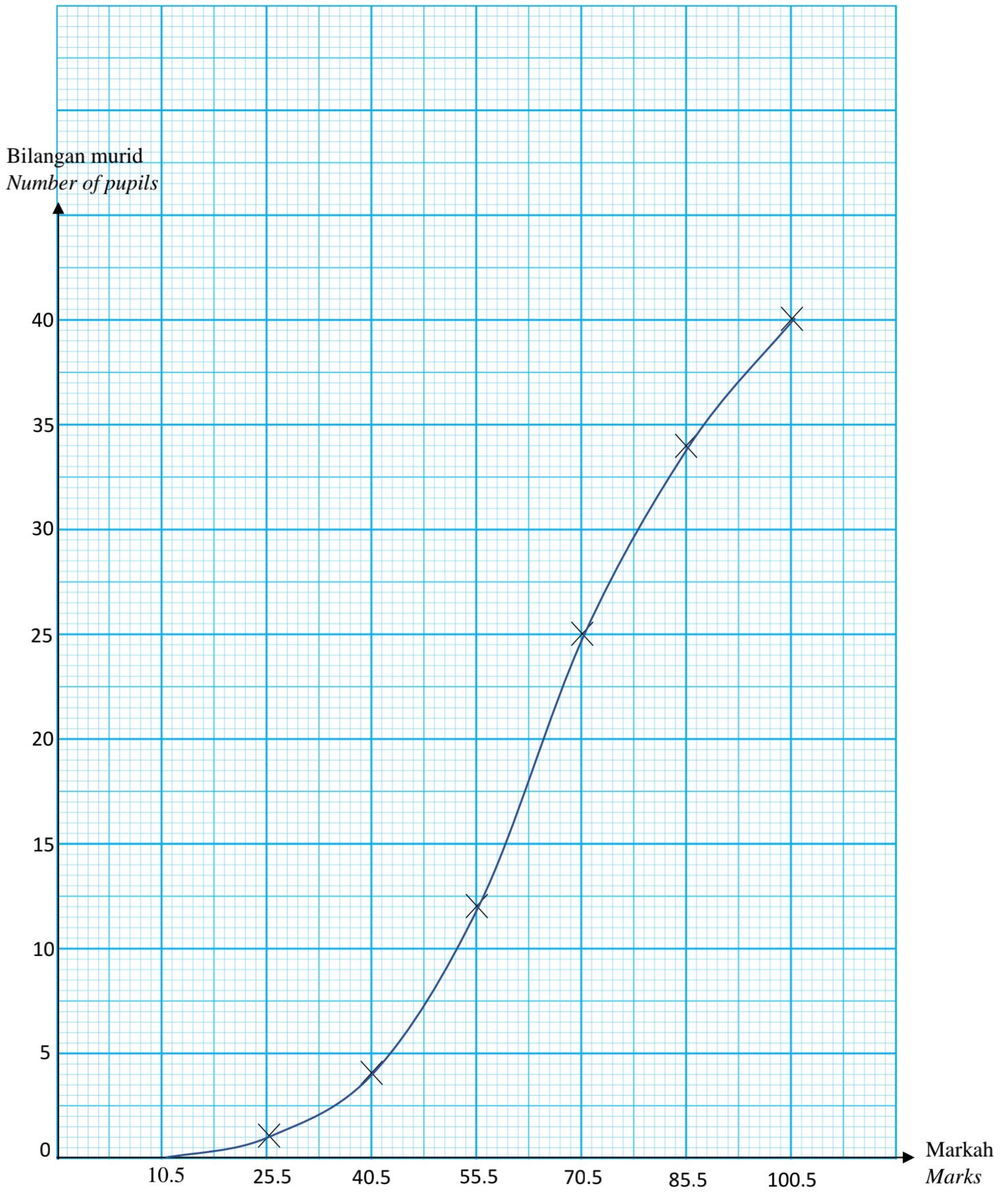


Soalan Question		Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
17	(c)	(2494 – 2000) (0.80) atau setara/ <i>or equivalent</i>  440 + (2494 – 2000) (0.80)  835.20  Nota/ <i>Note</i> :  Jawapan akhir 2 titik perpuluhan. <i>Final answer in 2 decimal places.</i>	1  1  1	
	(d)	$\sqrt{108}$ atau setara / <i>or equivalent</i>  $\frac{1}{2} \times \sqrt{108} \times 12$ atau/ <i>or</i> $\frac{1}{2} \times \sqrt{108} \times 12 \times 6$ atau setara/ <i>or equivalent</i>  374	1  1  1	
				<b>15</b>

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Graf untuk soalan 13(b)  
Graph for question 13(b)





Graf untuk soalan 14(b)  
Graph for question 14(b)

