



**MODUL PINTAS
TINGKATAN 5**

**MATEMATIK
Kertas 2**

1449/2

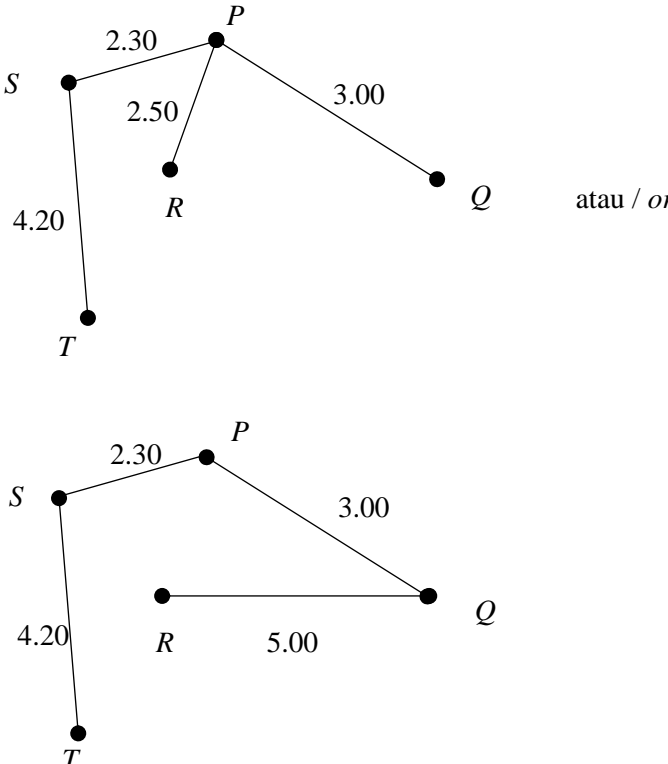
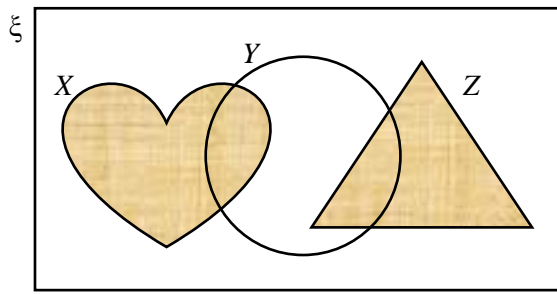
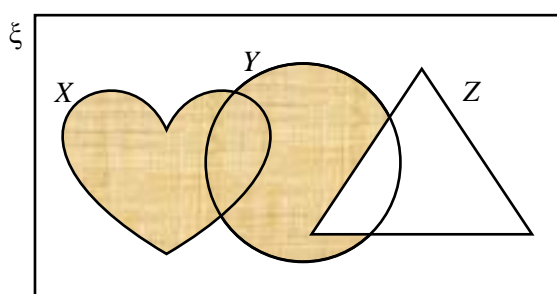
$2\frac{1}{2}$ jam

Dua jam tiga puluh minit

**PERATURAN PEMARKAHAN
MATEMATIK K2**

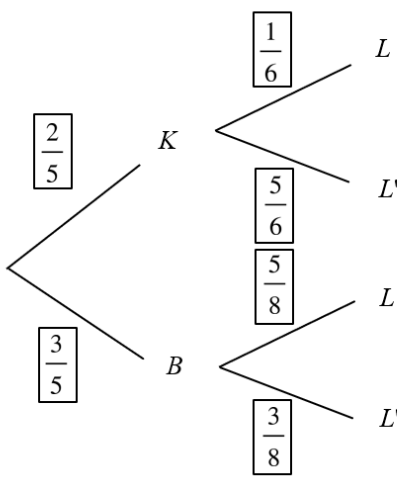
1449/2

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 $8 - 2a < 18$ <i>If $2a < 6$, then $8 - 2a < 18$</i> Benar/True	1 1	4
	(b)	Hujah ini lemah dan tidak meyakinkan. <i>The argument is weak and not cogent.</i> kerana premis adalah benar tetapi kesimpulan adalah palsu <i>because the premises is true but conclusion is false.</i>	1 1	
3	(a)	<p>Nota / Note:</p> <ol style="list-style-type: none"> Terima jawapan yang setara <i>Accept the equivalent answer</i> Graf terarah dilukis, beri 0 markah <i>Directed graph drawn, award 0 mark</i> Graf tak terarah dan tanpa pemberat dilihat, beri 1 markah <i>Undirected and unweighted graph seen, award 1 mark</i> 	2	3

Soalan Question	Cadangan Jawapan Suggested Answers	Markah Marks	Jumlah Total
3	<p>(b)</p> 	1	3
4	<p>(a) $4x + 4 + 2 + 10 = 4x + 2x$ atau setara / or equivalent $x = 8$</p> <p>(b)(i) $X \cup Z$</p>  <p>(ii) $X \cup (Y \cap Z')$</p>  <p>Nota: $(Y \cap Z')$ dilihat beri 1 markah. Note: $(Y \cap Z')$ seen award 1 mark.</p>	1 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>$\frac{10}{100} \times 50\,000$ atau / or 5 000</p> <p>RM620 \times 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>4</p>
6	<p>(a)</p> <p>$150 = \frac{k(2000)}{20}$</p> <p>$k = 1.5$ atau / or $\frac{3}{2}$</p> <p>$t = \frac{1.5c}{p}$ atau / or $t = \frac{3c}{2p}$</p> <p>(b)</p> <p>$90 = \frac{1.5(840)}{p}$ atau / or $90 = \frac{3(840)}{2p}$ atau setara /or equivalent</p> <p>$p = 14$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p>
7	<p>$\frac{180\,000}{1\,000} \times 1.63 + \frac{35}{100} \times \frac{180\,000}{1\,000} \times 1.75$</p> <p>atau setara / or equivalent</p> <p>403.65</p> <p>Nota /Note :</p> <p>$\frac{180\,000}{1\,000} \times 1.63$ atau /or $\frac{35}{100} \times \frac{180\,000}{1\,000} \times 1.75$</p> <p>atau setara beri 1 markah / or equivalent award 1 mark</p>	<p>2</p> <p>1</p>	<p>3</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)	Teksi bergerak sejauh 12 km dengan kelajuan 72 km j ⁻¹ bagi tempoh 10 minit terakhir atau setara. <i>The taxi travels for 12 km with a speed of 72 km h⁻¹ 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	

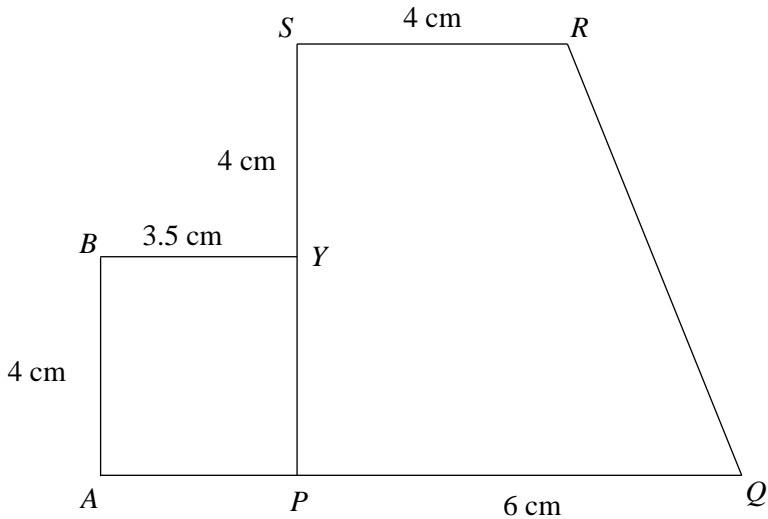
Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
11 (a)	 <p data-bbox="343 795 981 985"> $\frac{2}{5}$ dan/and $\frac{1}{6}$ dan/ and $\frac{5}{6}$ atau setara / or equivalent $\frac{3}{5}$ dan/and $\frac{5}{8}$ dan/and $\frac{3}{8}$ atau setara / or equivalent </p>	1 1	
(b)	(i) $\left(\frac{2}{5} \times \frac{1}{6}\right)$ $\frac{1}{15}$	1 1	
	(ii) $\left(\frac{2}{5} \times \frac{1}{6}\right) + \left(\frac{3}{5} \times \frac{5}{8}\right)$ $\frac{53}{120}$	1 1	
	(iii) $1 - \frac{53}{120}$ $\frac{67}{120}$	1 1	

8

Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
12	<p>(a) (i) (4, 0)</p> <p>(ii) P – (-2, 0)</p> <p>R – (1, -3)</p> <p>(b) (i) V - Putaran 90° lawan arah jam pada pusat (8,8) <i>anti-clockwise rotation of 90° about the centre (8,8)</i></p> <p>Nota / Note:</p> <ol style="list-style-type: none"> Putaran 90° pada pusat (8,8) dilihat, beri 2 markah <i>Rotation about the centre (8,8) seen, award 2 marks</i> Putaran 90° lawan arah jam, beri 2 markah <i>Anti-clockwise rotation of 90° seen, award 2 marks</i> Putaran, dilihat, beri 1 markah <i>Rotation seen, award 1 mark</i> <p>(b) (ii)</p> <div data-bbox="357 896 1232 1534" data-label="Figure"> </div> <p>Imej dilukis betul <i>Correct image drawn</i></p> <p>(ii) W – Putaran 180° pada pusat (7,6) <i>Rotation of 180° about the centre (7,6)</i></p> <p>Nota / Note:</p> <ol style="list-style-type: none"> Putaran, dilihat, beri 1 markah <i>Rotation, seen 1 mark</i> 	<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) $\frac{(1 \times 18) + (3 \times 33) + (8 \times 48) + (13 \times 63) + (9 \times 78) + (6 \times 93)}{40}$</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 $10.5 \leq x \leq 100.5$ dan $0 \leq y \leq 40$. Axes are drawn in correct direction and uniform scale for $10.5 \leq x \leq 100.5$ and $0 \leq y \leq 40$.</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 $10.5 \leq x \leq 100.5$ dan $0 \leq y \leq 40$. Smooth and continuous curve passing through 6 points using correct scale $10.5 \leq x \leq 100.5$ and $0 \leq y \leq 40$.</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="347 297 695 416"> <tr> <td data-bbox="347 297 485 353">x</td> <td data-bbox="485 297 598 353">-1.5</td> <td data-bbox="598 297 695 353">2</td> </tr> <tr> <td data-bbox="347 353 485 416">y</td> <td data-bbox="485 353 598 416">-1.5</td> <td data-bbox="598 353 695 416">16</td> </tr> </table> <p>(b) Kedua-dua paksi dilukis dalam arah yang betul dengan skala seragam untuk $-4 \leq x \leq 3$ dan $-5 \leq y \leq 35$.</p> <p><i>Both are drawn in correct direction with uniform scale for $-4 \leq x \leq 3$ and $-5 \leq y \leq 35$</i></p> <p>*9 titik di plot dengan betul. * 9 points are plotted correctly</p> <p>Nota/ Note :</p> <p>8 atau 7 titik di plot dengan betul, beri 1 markah. 8 or 7 points plotted correctly award 1 mark</p> <p>Graf yang licin dan melalui semua titik. <i>Smooth graph and continuous curve passing through all points.</i></p> <p>(c) (i) $-3.7 \leq x \leq -3.5$</p> <p style="padding-left: 40px;">$2.3 \leq x \leq 2.5$</p> <p>(ii) $-3.5 \leq y \leq -4.5$</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>1</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p>9</p>
x	-1.5	2							
y	-1.5	16							

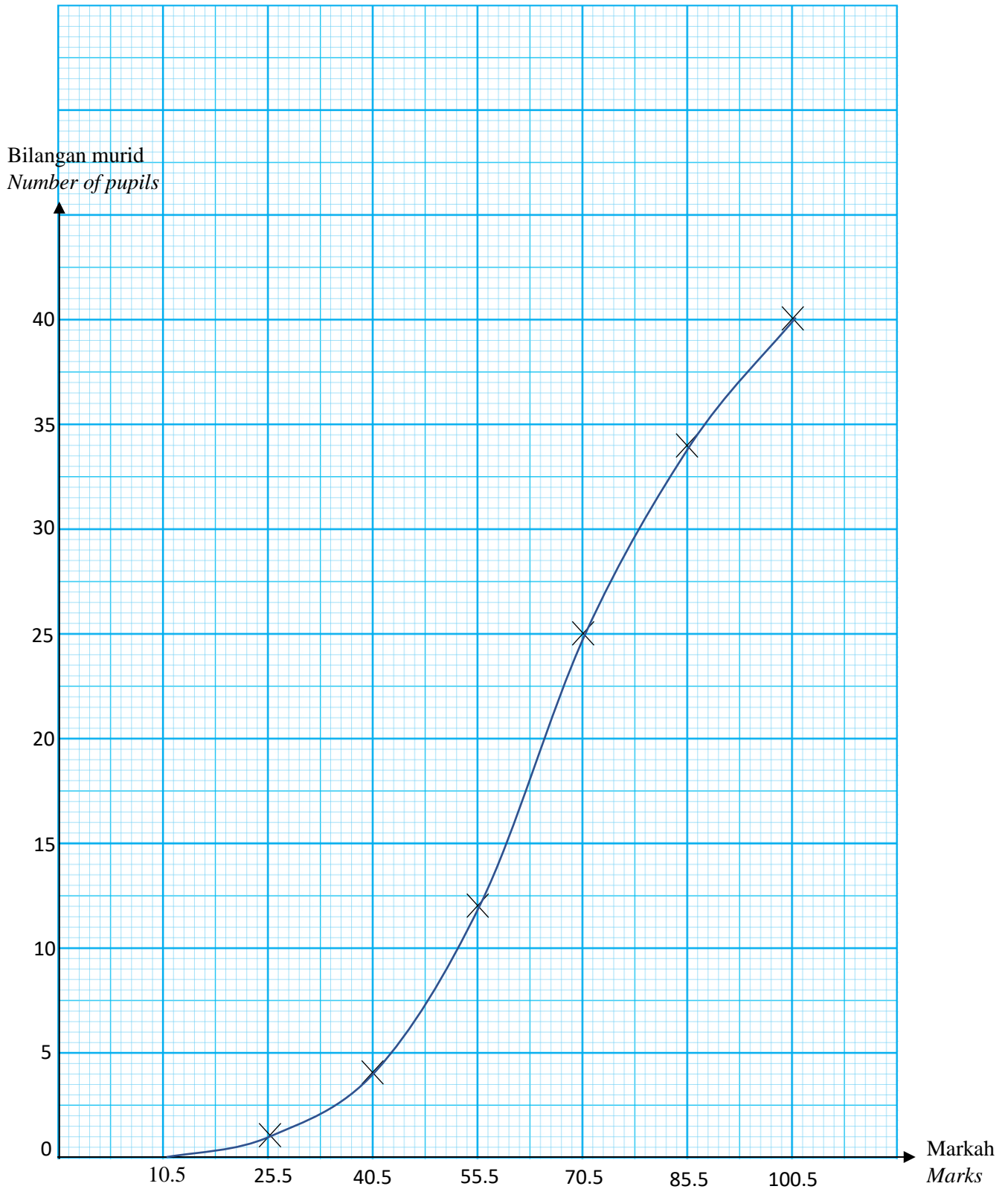
Soalan Question	Cadangan Jawapan Suggested Answer	Markah Marks	Jumlah Total
15 (b)	<p>(i)</p>  <p>Bentuk betul bagi trapezium $PQRS$ dan segi empat tepat $APYB$. Semua garisan padu . <i>Correct shape of trapezium $PQRS$ and rectangle $APYB$. All solid lines.</i></p> <p>$AQ > PS > PQ > PY = YS = SR > BY$</p> <p>Ukuran betul kepada ± 0.2 cm (sehalu) dan semua sudut pada bucu $90^\circ \pm 1^\circ$. <i>Measurement correct to ± 0.2 cm and all angle at the vertices $90^\circ \pm 1^\circ$.</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 (a)	<p>(i) $35K + 45L = 890$ atau setara / <i>or equivalent</i></p> <p>atau /<i>or</i></p> <p>$70K + 30L = 1\ 060$ 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>$K = 10$</p> <p>$L = 12$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	
(b)	<p>(i) $x + y \leq 20$</p> <p>$x \geq 2y$</p> <p>(ii)</p> <div data-bbox="671 958 1098 1413" data-label="Figure"> </div> <p>Nota / Note :</p> <p>Garis lurus /<i>straight line</i> $x + y \leq 20$</p> <p>Garis lurus /<i>straight line</i> $x \geq 2y$</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 (c)	<p>(2.40×8000) atau / or (2×150) atau/or (2.60×8000) atau/ or</p> <p>$\left(\frac{3.8}{100} \times 2.60 \times 8000\right)$ atau /or $\left(\frac{3.5}{100} \times 2.40 \times 8000\right)$</p> <p>$21\,400 - (2.40 \times 8000) + (2 \times 150) + \left(\frac{3.5}{100} \times 2.40 \times 8000\right)$</p> <p>atau / or</p> <p>$23\,200 - (2.60 \times 8000) + (250) + \left(\frac{3.8}{100} \times 2.60 \times 8000\right)$</p> <p>RM3 172 dan/and 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) $(1 \times 9^5) + (0 \times 9^4) + (1 \times 9^3) + (2 \times 9^2) + (6 \times 9^1) + (6 \times 9^0)$ atau/or RM60 000</p> <p>(ii) $(2 \times 7^5) + (2 \times 7^4) + (4 \times 7^3) + (4 \times 7^2) + (2 \times 7^1) + (2 \times 7^0)$</p> <p><u>atau / or</u></p> <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> <p>RM40 000 dan/and RM60 000</p> <p>Traktor B / <i>Tractor B</i></p> <p>(b) (i) $60x^2 \times 0.05 = 300$ atau setara / or equivalent</p> <p>$x = 10$</p> <p>(ii) $(RM1\,150 \times 12)$ atau / or RM13 800</p> <p>$\frac{759}{13800} \times 100\%$ atau setara / or equivalent</p> <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> <p>1</p>	

Soalan <i>Question</i>		Cadangan Jawapan <i>Suggested Answer</i>	Markah <i>Marks</i>	Jumlah <i>Total</i>
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	
				15

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



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

