



**MODUL PINTAS 2024**

**TINGKATAN 5**

**MATEMATIK**

**Kertas 2**

**1449/2**

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

Dua jam tiga puluh minit

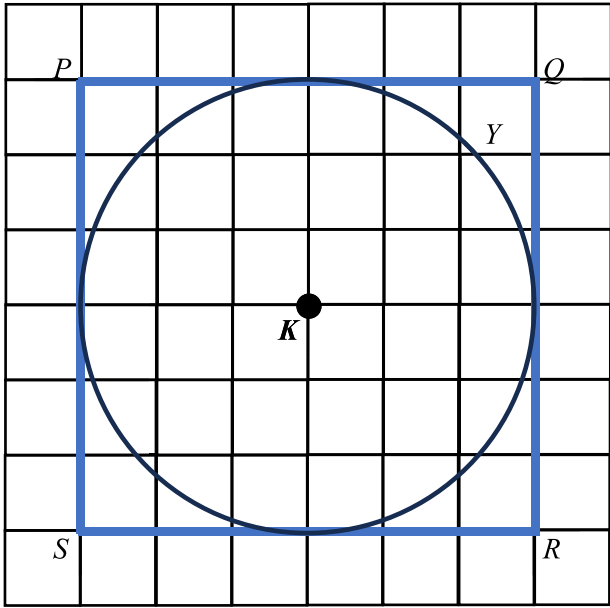
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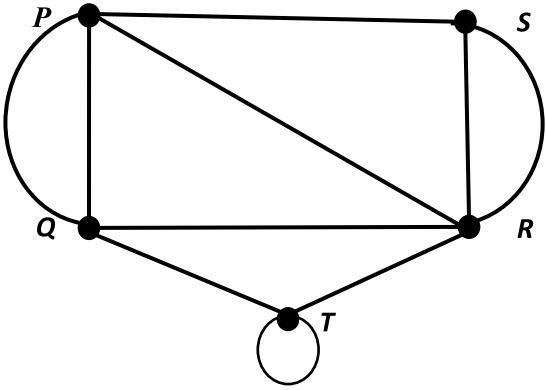
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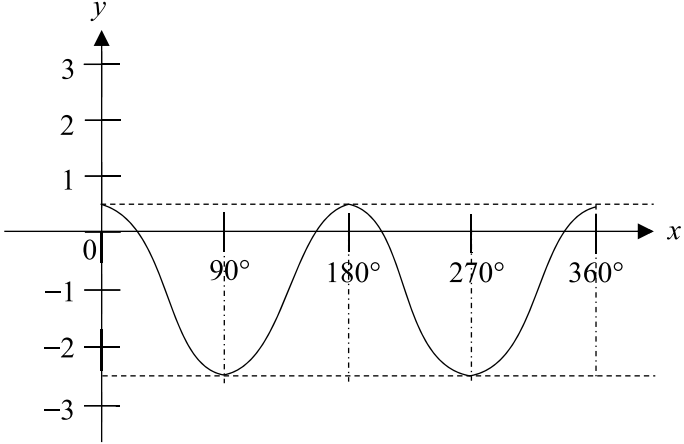
**PERATURAN PEMARKAHAN**

**MATEMATIK K2**

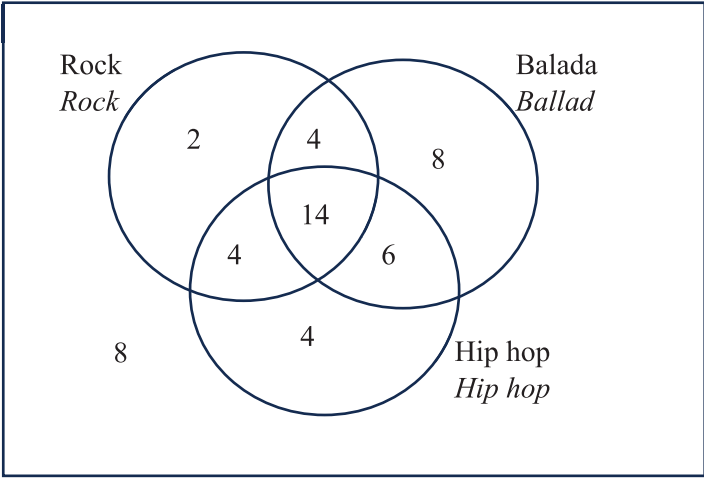
**1449/2**

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
1	<p>(a)</p> $3 = \frac{k(4 \times 10^4)}{5} \text{ atau setara / or equivalent}$ $t = \frac{3L}{8000W} \text{ atau setara / or equivalent}$ <p>(b)</p> $8 = \frac{3(1.6 \times 10^5)}{8000W} \text{ atau setara / or equivalent}$ <p>8</p>	1  1  1  1	4
2	<p>(a)</p>  <p>Nota / Note: Jangan terima lokus Y yang dilukis tanpa menggunakan jangka lukis. Do not accept locus Y drawn without using compass.</p>	1	
	<p>(b)</p> $2 \times \frac{22}{7} \times 3$ $\frac{132}{7} \text{ atau / or } 18 \frac{6}{7} \text{ atau / or } 18.86$ <p>Nota/Note: Terima jawapan yang menggunakan nilai <math>\pi = \frac{22}{7} = 3.142</math> atau nilai <math>\pi</math> dari kalkulator.  Accept answer that uses the value of <math>\pi = \frac{22}{7} = 3.142</math> or value of <math>\pi</math> from calculator</p>	1  1	3

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
3	 <p>Kesemua tepi dan gelung dilukis dengan betul tanpa anak panah <i>All edges and loop drawn correctly without arrow.</i></p> <p>Nota/Note:</p> <ol style="list-style-type: none"> <li>1. Terima 2 kesilapan, beri 1 markah. <i>Accept 2 mistakes, award 1 mark.</i></li> <li>2. Graf terarah dengan semua tepi dan gelung dilukis dengan betul, beri 1 markah. <i>Directed graph with all edges and loops drawn correctly, award 1 mark.</i></li> </ol> <p>20</p>	2	3
4	<p>(a) Antejadian : <math>x</math> ialah gandaan 6 <i>Antecedent : <math>x</math> is a multiple of 6</i></p> <p>Akibat : <math>x</math> ialah gandaan 3 <i>Consequent : <math>x</math> is a multiple of 3</i></p> <p>(b) Jika <math>\sin x = 0.5</math>, maka <math>x = 30^\circ</math> <i>If <math>\sin x = 0.5</math>, then <math>x = 30^\circ</math></i></p> <p>Palsu / <i>False</i></p>	1  1  1	4

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
5	(a) 121 239	1 1	
	(b)  <p>Nota / Note : 3 titik maksimum dan 2 titik minimum yang betul dilihat <u>atau</u> 2 lengkung kos lengkap dilihat beri 1 markah <i>3 maximum points and 2 minimum points correctly seen or 2 complete cos curves seen award 1 mark</i></p>	2	
	(c) Titik maksimum akan berada pada $y = 2$ dan titik minimum akan berada pada $y = -4$ <i>The maximum point will be at <math>y = 2</math> and the minimum point will be at <math>y = -4</math></i>	1	5
6	(a) (2,8) Nota / Note: (8,2) dilihat, beri 1 markah. (8,2) seen, award 1 mark.	2	
	(b)(i) Ya kerana <b>ukuran semua panjang sisi adalah sepadan dan semua sudut adalah sepadan</b> bagi kedua-dua heksagon. <i>Yes because measurement of all corresponding sides and angles are equal for both hexagons.</i> Nota/Note: Tiada markah jika tanpa perkataan <b>semua</b> <i>No mark if without word all</i>	1	
	(ii) Pantulan pada garis $x = 10$ . <i>Reflection on line <math>x = 10</math>.</i>  Nota/Note: Pantulan sahaja beri 1 markah <i>Reflection only award 1 mark</i>	2	5

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
7	(a) Mengkaji semula dan menyemak kemajuan <i>Reviewing and revising the progress</i>	1	4
	(b) Amelia: $3500 + 400 + 800 - 1300 - 650 - 200$ atau setara / <i>or equivalent</i> Julia: $3000 + 150 + 850 - 1800 - 700 - 300$ atau setara / <i>or equivalent</i> Amelia kerana pendapatan lebih Amelia adalah lebih banyak berbanding Julia. <i>Amelia because surplus of income of Amelia is more than Julia</i>	1 1 1	
8	(a) $m = \frac{3}{4}$ atau / <i>or</i> $\frac{EC}{28} = \frac{12}{16}$  $0 = \frac{3}{4}(-28) + c$ atau / <i>or</i> $EC = 21$  $y = \frac{3}{4}x + 21$	1  1  1	
	(b) 9	1	
9	(a) $\frac{90}{360} \times 2 \times \frac{22}{7} \times 4.8$ atau setara / <i>or equivalent</i>  $7.543$ atau / <i>or</i> $\frac{264}{35}$ atau / <i>or</i> $7\frac{19}{35}$	1  1	4
	(b) $\frac{90}{360} \times \frac{22}{7} \times 12^2 + \frac{90}{360} \times \frac{22}{7} \times 4.8^2$ atau setara / <i>or equivalent</i>  $\frac{22\,968}{175}$ atau / <i>or</i> $131\frac{43}{175}$ atau / <i>or</i> $131.25$	1  1	

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
10	(a) <div style="border: 1px solid black; padding: 10px; margin: 10px 0;">  </div> <p>Nota / Note:</p> <ol style="list-style-type: none"> <li>4, 6, 14 di kedudukan yang betul, beri 1 markah. 4, 6, 14 at correct position, award 1 mark.</li> <li>Jangan terima jawapan yang ditulis sebagai unsur. Do not accept answer written as element.</li> </ol>	2	
	(b) (i) 10 (ii) 8	1 1	<b>4</b>
11	(a) $\frac{22}{7} \times 25^2 \times 68$ atau / or $133\,571\frac{3}{7}$ atau setara / or equivalent $\frac{3}{4} \times 15.8 \times 14$ atau / or $\frac{3}{4} \times 15.8 \times 14 \times 6$ atau setara / or equivalent $\frac{3}{4} \times 15.8 \times 14 \times 6 \times 150$ atau / or 149 310  Tidak cukup / Not enough  $133\,571\frac{3}{7} < 149\,310$ atau setara / or equivalent	1 1 1 1 1	
11	(b) $30 \times 60$ $0.7 \times 30 \times 60$ atau / or 1 260  $\frac{0.7 \times 30 \times 60}{133571\frac{3}{7}} \times 100\%$ $0.94\%$	1 1 1 1	<b>9</b>



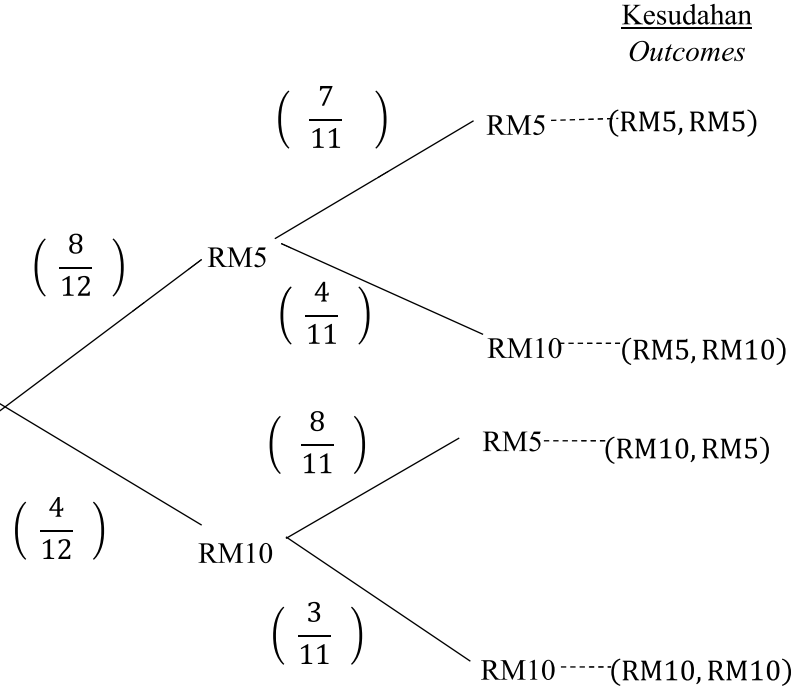
Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
13	<p>(a)(i) 34</p> <p>33 dan / and 41</p> <p>(a)(ii) <math>\frac{21+23+24+27+31+34+34+35+42+43}{10}</math></p> <p style="text-align: center;"><b>Atau / or</b></p> <p><math>\frac{17+26+29+33+33+38+41+41+44+45}{10}</math></p> <p>31.4 dan / and 34.7</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	
	<p>(b) Faris</p> $\sqrt{\frac{21^2+23^2+24^2+27^2+31^2+34^2+34^2+35^2+42^2+43^2}{10}} \text{ -*}31.4^2$ <p><u>atau setara / or equivalent</u></p> <p>7.255</p> <p>Danesh</p> $\sqrt{\frac{17^2+26^2+29^2+33^2+33^2+38^2+41^2+41^2+44^2+45^2}{10}} \text{ -*}34.7^2$ <p><u>atau setara / or equivalent</u></p> <p>8.427</p> <p>Faris akan dipilih kerana nilai skor lebih konsisten dan nilai sisihan piawai lebih kecil.</p> <p><i>Faris will be chosen because the score value is more consistent and the standard deviation value is smaller.</i></p> <p style="text-align: center;"><u>atau / or</u></p> <p>Danesh akan dipilih kerana nilai min Danesh &gt; min Faris</p> <p><i>Danesh will be chosen because the value of Danesh's mean &gt; Faris's mean</i></p> <p>Atau setara / or equivalent</p> <p>Nota / Note:</p> <p>Mesti menunjukkan jalan kerja sisihan piawai untuk markah justifikasi.</p> <p><i>Need to show the working for standard deviation to obtain mark for justification.</i></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	



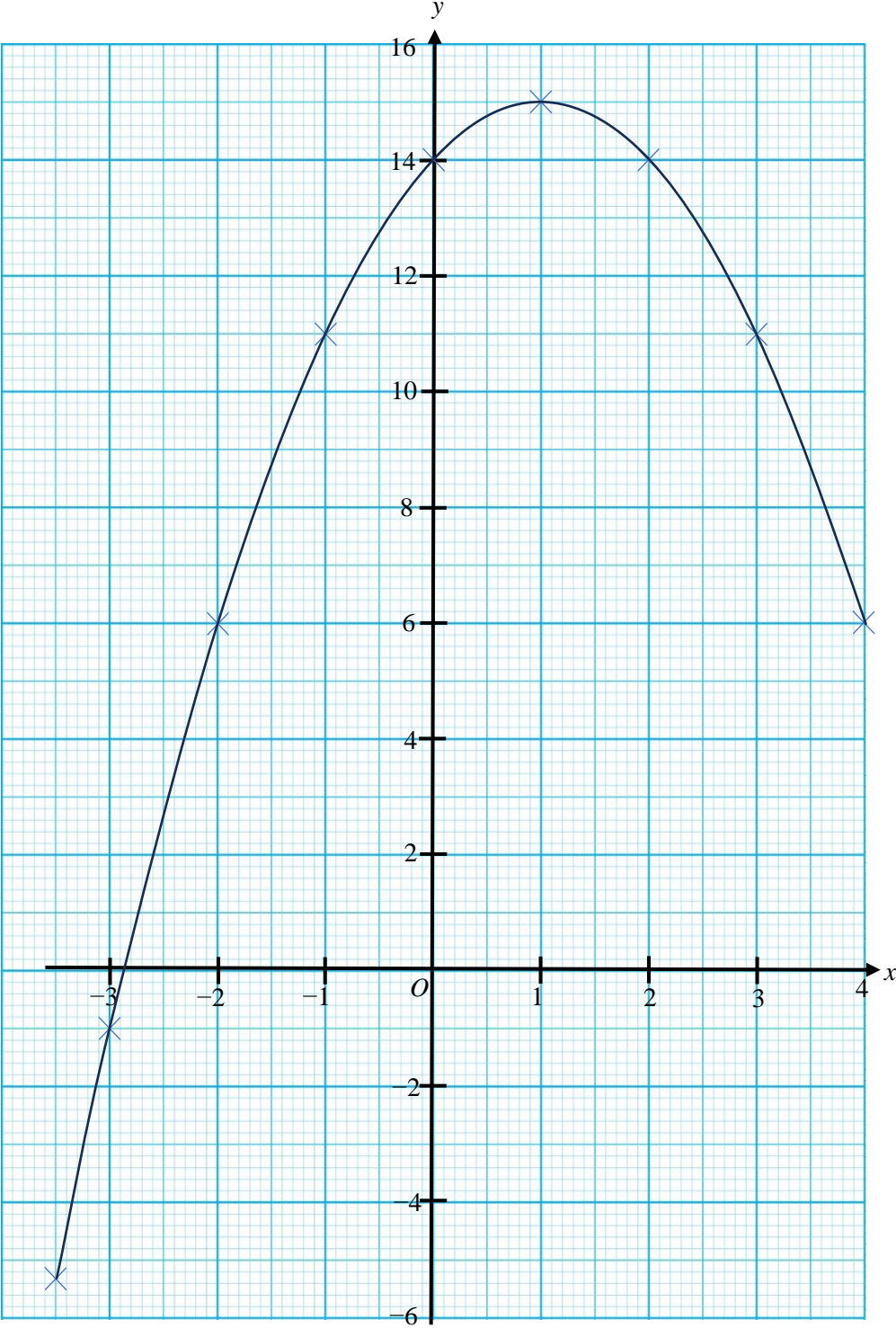
Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah						
14	(a) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><math>x</math></td> <td style="text-align: center;"><math>-2</math></td> <td style="text-align: center;"><math>1</math></td> </tr> <tr> <td style="text-align: center;"><math>y</math></td> <td style="text-align: center;"><math>6</math></td> <td style="text-align: center;"><math>15</math></td> </tr> </table>	$x$	$-2$	$1$	$y$	$6$	$15$	1, 1	<b>8</b>
	$x$	$-2$	$1$						
	$y$	$6$	$15$						
	(b) Kedua-dua paksi dilukis dalam arah yang betul dengan skala seragam untuk $-3.5 \leq x \leq 4$ dan $-6 \leq y \leq 15$ . <i>Both are drawn in correct direction with uniform scale for <math>-3.5 \leq x \leq 4</math> and <math>-6 \leq y \leq 15</math>.</i>  7 titik dan *2 titik di plot dengan betul. <i>7 points and *2 points are plotted correctly.</i>  Nota/ Note : 8 atau 7 titik di plot dengan betul, beri 1 markah. <i>8 or 7 points plotted correctly reward 1 mark.</i>  Graf yang licin dan melalui semua titik. <i>Smooth graph and continuous curve passing through all points.</i>	1  2  1							
(c) $x = -1$  (-1, 15)	1  1								
15	(a) $x + y \leq 80$ atau setara / <i>or equivalent</i> $y \leq 2x$ atau setara / <i>or equivalent</i> $y \geq 10$	1  1  1	<b>10</b>						
	(b) Rujuk graf di halaman 12 <i>Refer to the graph on the page 12</i>  $x + y = 80$ dilukis dengan betul / <i>drawn correctly</i> $y = 2x$ dilukis dengan betul / <i>drawn correctly</i> $y = 10$ dilukis dengan betul / <i>drawn correctly</i> Rantau yang memenuhi ketaksamaan linear dilorek dengan betul <i>The region that satisfies the linear inequality is correctly shaded</i>	1  1  1  1							
	(c)(i) 10	1							
	(c)(ii) $35(70) + 20(10)$  2 650  Nota/ Note : Nilai diperoleh betul daripada kawasan lorekan yang salah hanya diberi 1 markah untuk jalan kerja. <i>Values are obtained from wrong shading part, only award 1 mark for working.</i>	1  1							

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
16	(a)(i) $x + x + x + 30 - x + 2x + 30$ <u>atau</u> setara / <u>or</u> equivalent $4x + 60$ <u>atau</u> setara / <u>or</u> equivalent	1 1	4
	(a)(ii) $4x + 60 = 96$ <u>atau</u> setara / <u>or</u> equivalent 9	1 1	
16	(b)(i) $L = 3K$ <u>atau / or</u> $35L + 3K = 1\ 620$ <u>atau</u> setara / <u>or</u> equivalent  <b><u>Kaedah Penggantian</u></b> $(35)(3K) + 3K = 1\ 620$ <u>atau / or</u> $35L + 3\left(\frac{L}{3}\right) = 1620$ $108K = 1\ 620$ <u>atau / or</u> $36L = 1620$ <u>atau</u> setara / <u>or</u> equivalent  $K = 15$ $L = 45$  <b>ATAU / OR</b> <b><u>Kaedah Penghapusan</u></b> $L - 3K = 0$ $36L = 1\ 620$ <u>atau / or</u> $35L - 105K = 0$  $K = 15$ $L = 45$  Nota / Notes : Terima apa-apa simbol berbeza yang mewakili bilangan lembu dan kambing <i>Accept any two different symbols for number of cows and number of goats</i>	1  1  1  1 1  1 1  1 1	6
	(b)(ii) 30	1	
16	(c)(i) Bebas risiko <u>atau</u> tiada // <i>Risk free or none</i>	1	5
	(c)(ii) $30\ 000 \left(1 + \frac{0.043}{6}\right)^{(6)(1)}$ <u>atau / or</u> $30\ 000 \left(1 + \frac{0.0475}{2}\right)^{(2)(1)}$  $31\ 313.33$ <u>atau / or</u> $31\ 441.92$ <u>atau / or</u> $1\ 313.33$ <u>atau / or</u> $1\ 441.92$  Bank Nurani Ia menawarkan faedah yang lebih tinggi <u>atau</u> setara <i>It offers higher return or equivalent</i>	1  1  1 1	
			<b>15</b>

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
17	<p>(a)(i) <math>L = xy - \frac{1}{2} \left(\frac{1}{2}x\right) \left(\frac{2}{3}y\right)</math></p> <p><math>L = \frac{5}{6}xy</math></p> <p>(a)(ii) <math>L = \frac{5}{6}(18)(3)</math></p> <p>atau 45 dilihat or 45 seen</p> <p>(a)(iii) <math>40 = \frac{5}{6}(4)(y)</math></p> <p><math>y = 12</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p>
	<p>(b)(i) <math>\frac{200}{x} - \frac{200}{x+20} = \frac{30}{60}</math></p> <p><math>x^2 + 20x - 8\,000 = 0</math></p> <p><math>(x - 80)(x + 100) = 0</math></p> <p><math>x = 80</math></p> <p>(b)(ii) 80 + 20 atau / or 100</p> <p>Tidak, Encik Farid tidak mematuhi peraturan had laju lebuh raya kerana <math>100 &gt; 90</math>. No, Encik Farid did not follow the highway speed limit because <math>100 &gt; 90</math></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>6</p>

Soalan Question	Cadangan Jawapan Suggested Answers	Sub Markah	Markah
17	<p data-bbox="288 286 352 315">(c)(i)</p> <div data-bbox="379 309 1177 996" style="text-align: center;"> <p><u>Kesudahan</u> <i>Outcomes</i></p>  </div> <p data-bbox="387 1037 547 1066">Nota / Notes:</p> <ol data-bbox="387 1072 1015 1211" style="list-style-type: none"> <li>Semua nilai kebarangkalian betul beri 1 markah. <i>All probabilities value are correct award 1 mark</i></li> <li>Semua kesudahan betul beri 1 markah <i>All outcomes are correct award 1 mark.</i></li> </ol>	2	
	<p data-bbox="288 1303 352 1332">(c)(ii)</p> $\left(\frac{8}{12} \times \frac{4}{11}\right) + \left(\frac{4}{12} \times \frac{8}{11}\right)$ $\frac{16}{33}$	1 1	4
			<b>15</b>

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



Graf untuk soalan 15(b)  
Graph for question 15(b)

