



**MODUL PINTAS
TINGKATAN 5**

1449/2

**MATEMATIK
Kertas 2**

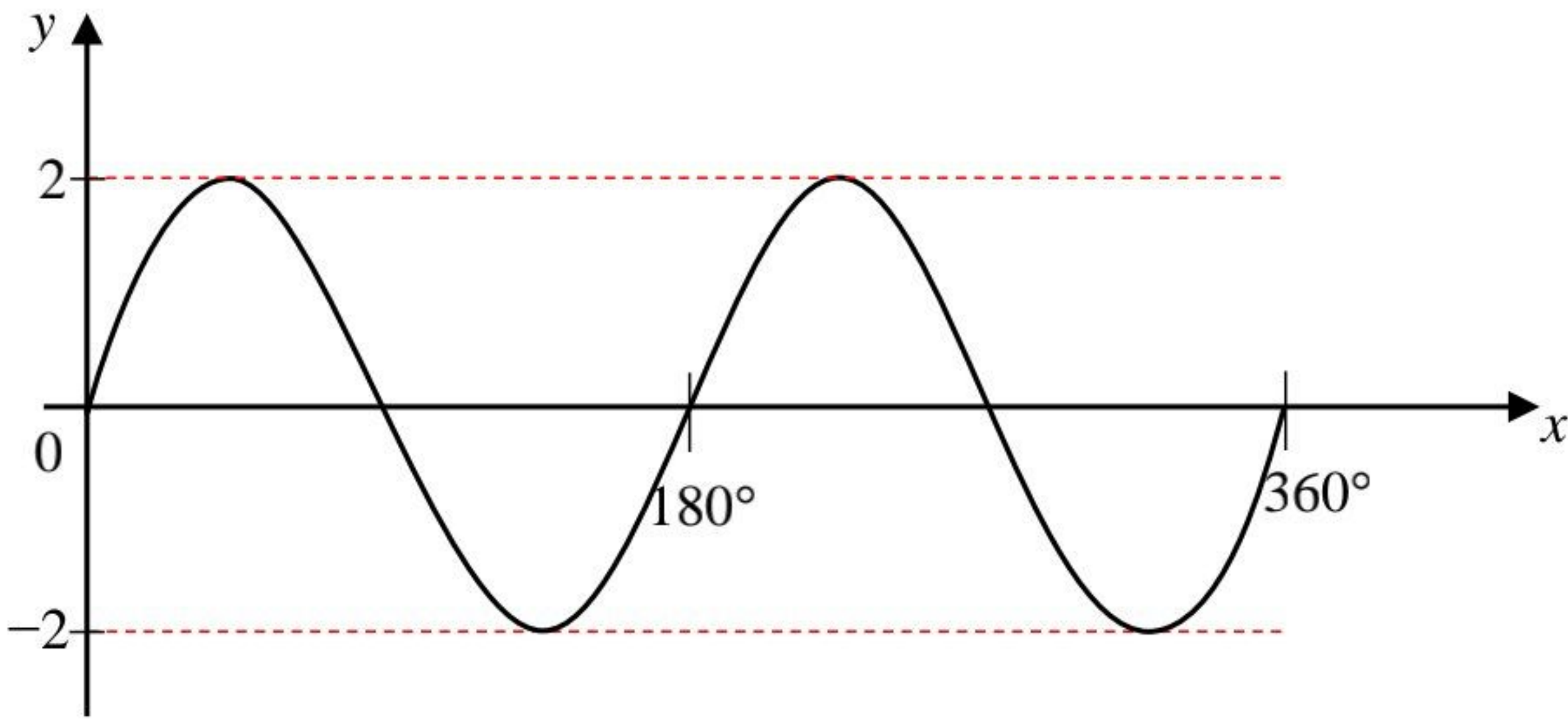
$2\frac{1}{2}$ jam

Dua jam tiga puluh minit

PERATURAN PEMARKAHAN MATEMATIK K2

1449/2

SKEMA PEMARKAHAN MATEMATIK KERTAS 2 (SET 2)
MODUL PINTAS 2022
MATEMATIK TINGKATAN 5

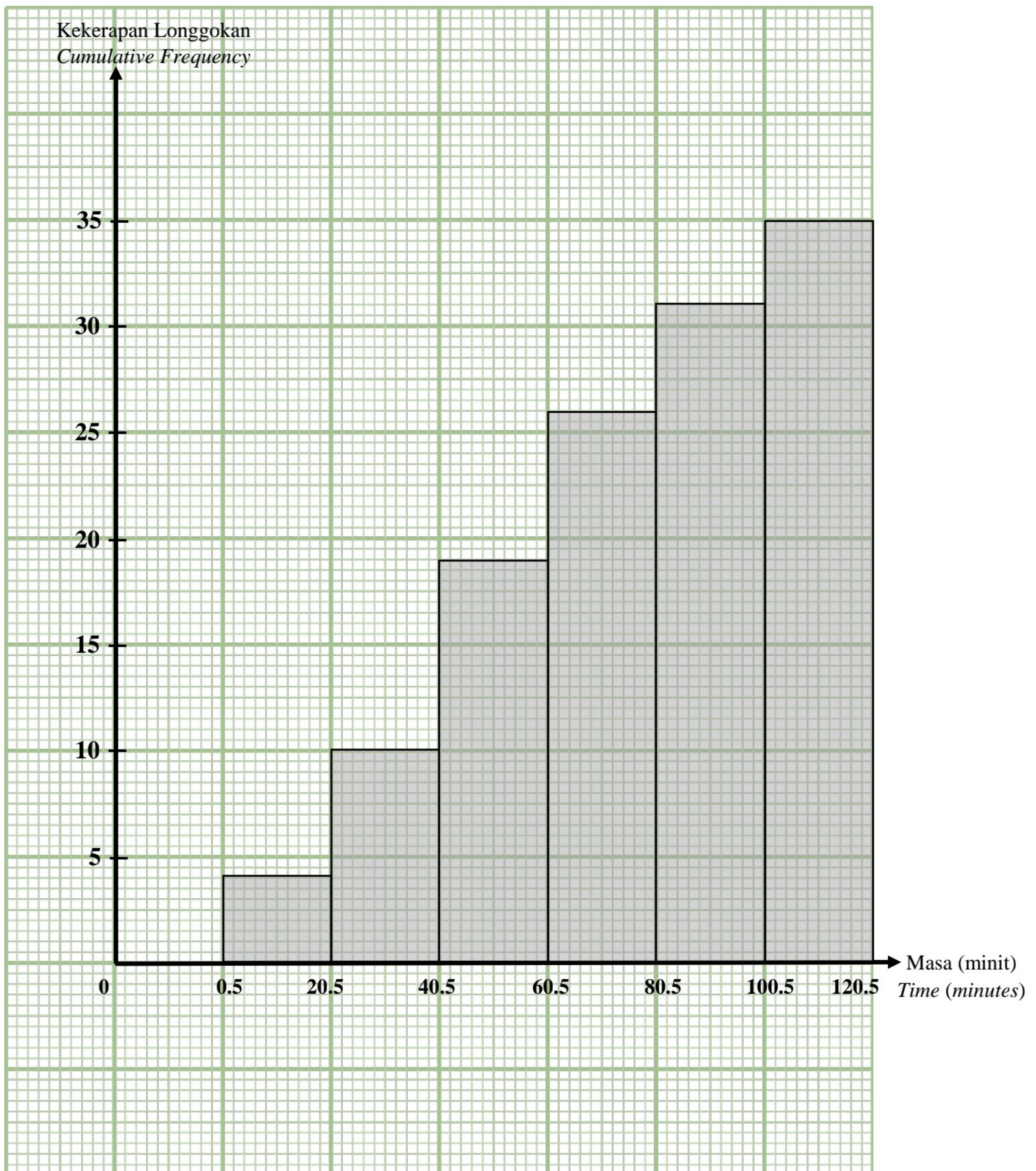
Soalan Question		Skema markah Marking Scheme	Markah Marks	
			Sub-Markah Submarks	Jumlah Markah Total Marks
1	(a)			4
		Nota / Notes : Bentuk yang betul bagi $0^\circ \leq x \leq 360^\circ$ / Correct form for $0^\circ \leq x \leq 360^\circ$ Dua kitaran / Two cycles Amplitud yang betul / The correct amplitude	1 1 1	
	(b)	180°	1	
2	(a)	4 Nota: $-\frac{2}{2(-1)}$ dilihat beri 1 markah / seen, award 1 mark	2	6
	(b)	$x^2 - 2x - 3 = 0$ $(x+1)(x-3) = 0$ $x = -1, x = 3$ RM 58.08	1 1 1 1	
3		$5 \times 10^4 \times 3.4 \times 10^6$ or $\frac{1}{2}(4 \times 10^5 \times q)$	1	3
		$5 \times 10^4 \times 3.4 \times 10^6 = \frac{1}{2}(4 \times 10^5 \times q)$	1	
		8.5×10^5	1	
4	(a)	Benar/ True	1	4
	(b)	Hasil tambah sudut pedalaman poligon W bukan 900° <i>The sum of the interior angles of polygon W is not 900°</i>	1	
	(c)	(i) Songsangan/ Inverse: Jika $m \geq 8$, maka $m - 1 \geq 7$ If $m \geq 8$, then $m - 1 \geq 7$ (ii) Kontrapositif/ Contrapositive: Jika $m - 1 \geq 7$, maka $m \geq 8$. If $m - 1 \geq 7$, then $m \geq 8$	1 1	

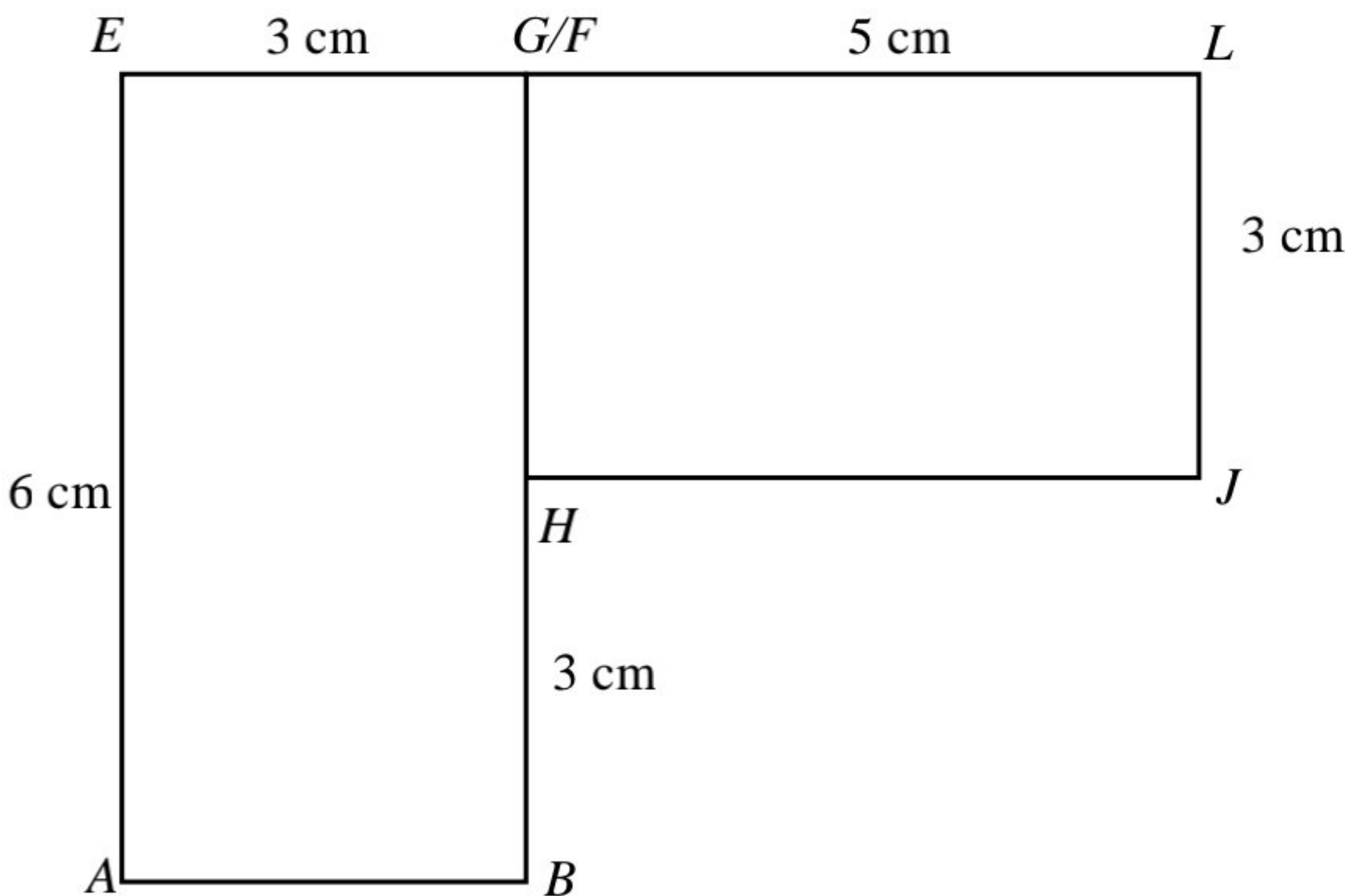
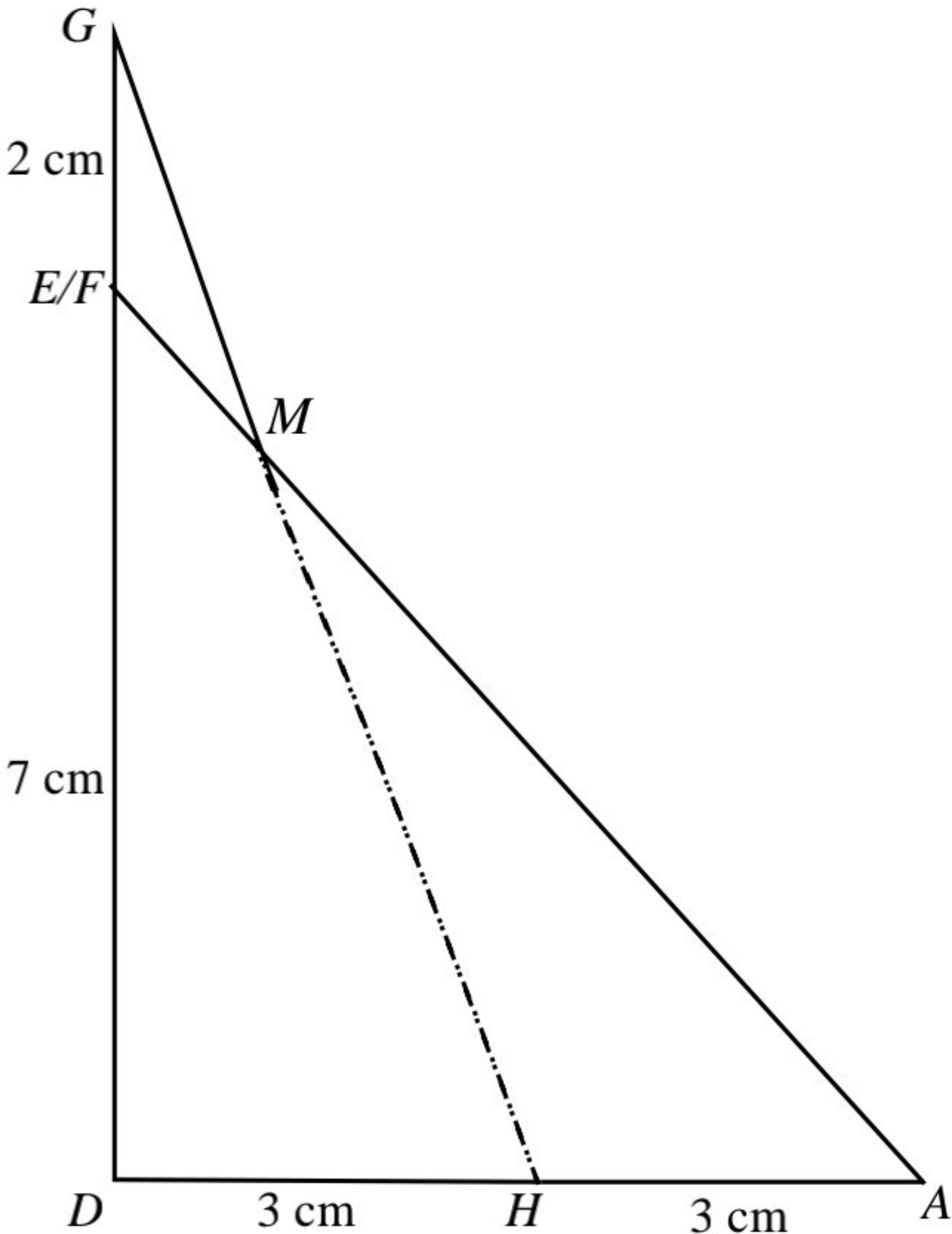
Selamat mengulangkaji dari telegram@soalanpercubaanspm

Soalan Question		Skema markah Marking Scheme	Markah Marks	
			Sub-Markah Submarks	Jumlah Markah Total Marks
5	(a)	$x = 6$	1	4
	(b)	$m = -\frac{1}{3}$	1	
		$0 = -\frac{1}{3}(12) + c$	1	
		$y = -\frac{1}{3}x + 4$	1	
6	(a)	$x > 1$	1	4
		$x + y < 8$	1	
		$4y \geq -x + 8$	1	
	(b)	5	1	
7		$\frac{85}{100} \times \text{RM}700000$ <u>atau</u> RM595000	1	3
		$\text{RM}126500 = \frac{550000}{595000} \times x - \text{RM}5500$	1	
		RM142 800	1	
8	(a)	RM1200 $\times$ 12 <u>atau</u> RM14 400	1	5
		RM19200 $\times \frac{7}{100}$ <u>atau</u> RM1344	1	
		RM14400 $\times \frac{5.5}{100}$ <u>atau</u> RM792	1	
		RM1344 + RM792 <u>atau</u> RM2136	1	
		RM1068	1	
9		$44.94 = \frac{k(85.6)}{8}$ <u>atau</u> setara	1	3
		$k = 4.2$ <u>atau</u> setara	1	
		$L = \frac{4.2V}{j}$ <u>atau</u> setara	1	
10		$\frac{1}{2} \times (4 + 8) \times 9$ atau setara	1	4
		$\frac{3}{4} \times 8 \times (t - 9)$	1	
		$\frac{1}{2} \times (4 + 8) \times 9 = \frac{3}{4} \times (8(t - 9))$ atau setara	1	
		18	1	

Soalan		Skema markah	Markah																													
			Sub Markah	Jumlah Markah																												
11	(a)	$\frac{9(1) + 9(2) + 6(3) + 5(4) + 4(5) + 2(6) + 2(7)}{9 + 9 + 6 + 5 + 4 + 2 + 2}$	1	10																												
		3	1																													
		$\frac{9(1)^2 + 9(2)^2 + 6(3)^2 + 5(4)^2 + 4(5)^2 + 2(6)^2 + 2(7)^2}{9 + 9 + 6 + 5 + 4 + 2 + 2} - 3^2$	2																													
		3.135	1																													
	(b)	(i)	<table><tr><th>Jisim (kg) <i>Mass (kg)</i></th><th>Kekerapan <i>Frequency</i></th><th>Kekerapan Longgokan <i>Cumulative frequency</i></th><th>Sempadan Atas <i>Upper Boundary</i></th></tr><tr><td>1 – 20</td><td>4</td><td>4</td><td>20.5</td></tr><tr><td>21 – 40</td><td>6</td><td>10</td><td>40.5</td></tr><tr><td>41 – 60</td><td>9</td><td>19</td><td>60.5</td></tr><tr><td>61 – 80</td><td>7</td><td>26</td><td>80.5</td></tr><tr><td>81 – 100</td><td>5</td><td>31</td><td>100.5</td></tr><tr><td>101 – 120</td><td>4</td><td>35</td><td>120.5</td></tr></table> Kekerapan longgokan (semua betul) <i>Cumulative frequency (all correct)</i> Sempadan Atas (semua betul) <i>Upper Boundary (all correct)</i>		Jisim (kg) <i>Mass (kg)</i>	Kekerapan <i>Frequency</i>	Kekerapan Longgokan <i>Cumulative frequency</i>	Sempadan Atas <i>Upper Boundary</i>	1 – 20	4	4	20.5	21 – 40	6	10	40.5	41 – 60	9	19	60.5	61 – 80	7	26	80.5	81 – 100	5	31	100.5	101 – 120	4	35	120.5
Jisim (kg) <i>Mass (kg)</i>	Kekerapan <i>Frequency</i>	Kekerapan Longgokan <i>Cumulative frequency</i>	Sempadan Atas <i>Upper Boundary</i>																													
1 – 20	4	4	20.5																													
21 – 40	6	10	40.5																													
41 – 60	9	19	60.5																													
61 – 80	7	26	80.5																													
81 – 100	5	31	100.5																													
101 – 120	4	35	120.5																													
	(ii)	Rujuk Histogram <i>Refer Histogram</i> Paksi dilukis ikut arah yang betul dengan skala seragam untuk $0.5 < x < 120.5$ and $0 < y < 35$ <i>Axes drawn in the correct directions with uniform scales for $0.5 < x < 120.5$ and $0 < y < 35$</i> Histogram dilukis betul <i>Histogram is drawn correctly</i>	1 2																													

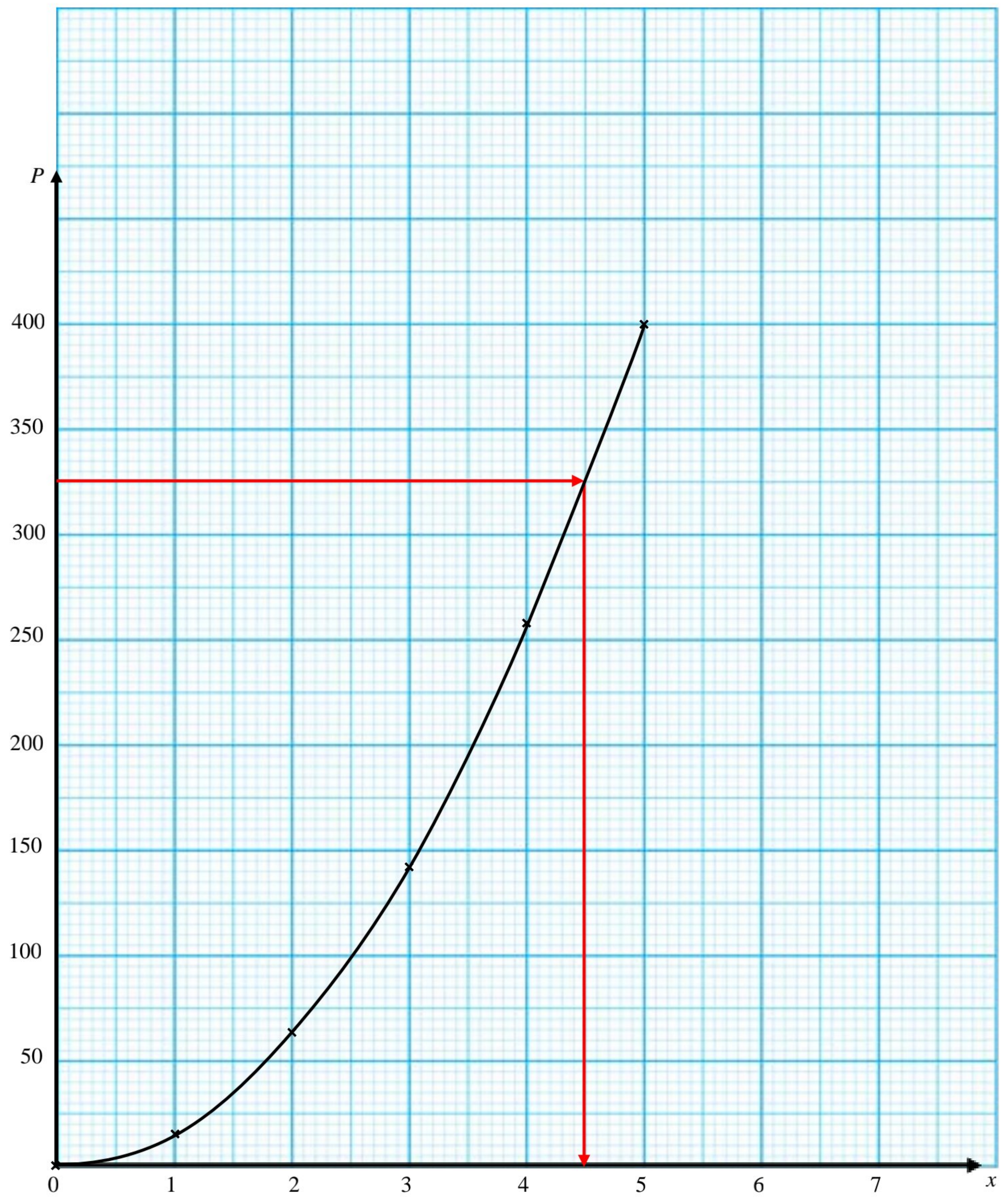
Graf untuk soalan 11
Graph for question 11



Soalan		Skema markah	Markah	
			Sub Markah	Jumlah Markah
12	(a)			
		Bentuk segi empat <i>AEFB</i> dan segi empat <i>HFLJ</i> yang betul. Semua garis padu. <i>Correct shape with rectangle AEFB and rectangle HFLJ correctly drawn. All solid lines</i>	2	
		$BF > FL > LJ = EF = BH$	1	
		Ukuran betul kepada ± 0.2 cm (sehala) dan semua sudut tepat pada bucu-bucu = $90^\circ \pm 1^\circ$ <i>Measurements correct to ± 0.2 cm (one way) and all right angles at vertices = $90^\circ \pm 1^\circ$</i>	1	
12	(b)			
		Segi tiga <i>DEA</i> dan segi tiga <i>DGH</i> dilukis dengan betul. (Abaikan garis putus-putus) <i>Triangle DEA and triangle DGH are correctly drawn. (Ignore the dashed lines)</i>	2	

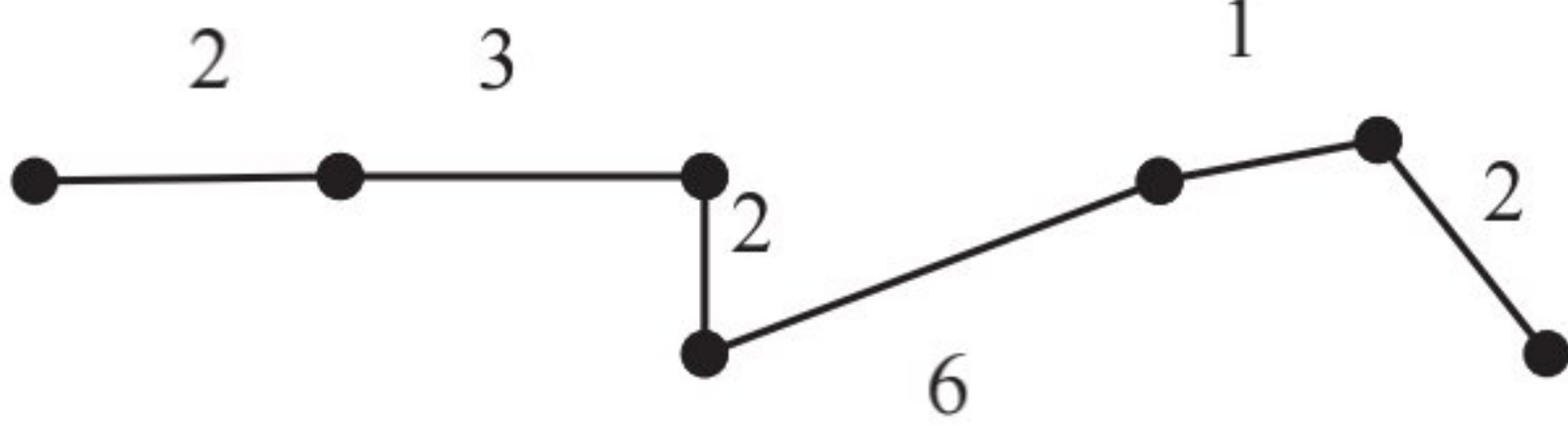
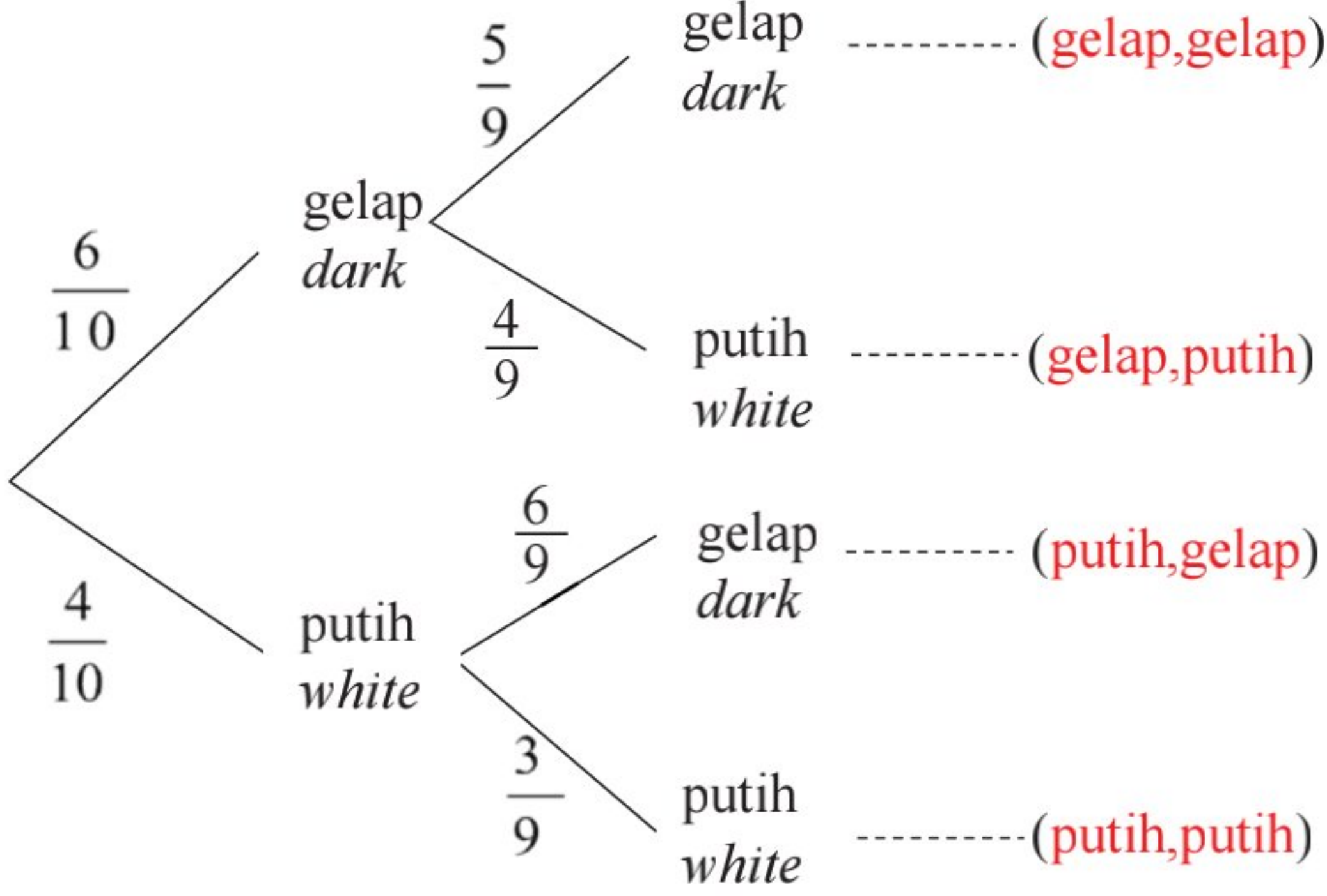
Soalan		Skema markah		Markah							
				Sub Markah	Jumlah Markah						
		Garis <i>MH</i> putus-putus / <i>Dashed MH lines</i> .		1	9						
		$DG > DA > DE > DH = HA > EF$		1							
		Ukuran betul kepada ± 0.2 cm (sehalu) dan pada $D = 90^\circ \pm 1^\circ$ <i>Measurements correct to ± 0.2 cm (one way) and angle at $D = 90^\circ \pm 1^\circ$</i>		1							
13	(a)	(i)	$3k - (-2 \times 6) = 0$ <u>atau</u> setara / or equal	1	8						
			$k = -4$	1							
	(b)		$5x + 2y = 1071$ <u>atau</u> setara	1							
			$3x + 8y = 2159$ <u>atau</u> setara	1							
			$\begin{bmatrix} 5 & 2 \\ 3 & 8 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 1071 \\ 2159 \end{bmatrix}$	1							
			$\begin{bmatrix} x \\ y \end{bmatrix} = \frac{1}{5(8) - 2(3)} \begin{bmatrix} 8 & -2 \\ -3 & 5 \end{bmatrix} \begin{bmatrix} 1071 \\ 2159 \end{bmatrix}$	1							
$x = \text{RM}125$	1										
$y = \text{RM}223$	1										
14	(a)	$P = 16x^2$		1	8						
	(b)	<table border="1"><tr><td>x</td><td>3</td><td>5</td></tr><tr><td>P</td><td>144</td><td>400</td></tr></table>		x		3	5	P	144	400	1
		x	3	5							
	P	144	400								
	Nota: mesti betul 144 dan 400 untuk 1 markah										
(c)	<u>Graph</u> Axes are drawn in the correct direction, uniform scale for $0 \leq x \leq 5$ and $0 \leq P \leq 400$. 4 points and 2 points* plotted accurately		1								
	Smooth and continuous curve without straight line(s) and passes through all the 6 correct points $0 \leq x \leq 5$ and $0 \leq P \leq 400$. <u>Notes:</u> (1) 4 points plotted correctly award 1 mark (2) Other scale being used, subtract 1 mark		2								
(d)	$4.4 < x < 4.6$		1								
	$8.8 < \text{width} < 9.2$		1								

Graf untuk soal 14
Graph for question 14



Soalan	Skema markah		Markah	
			Sub Markah	Jumlah Markah
15	(a)	X : Pantulan pada paksi-y / garis $x = 0$ <i>Reflection on the y-axis / line $x = 0$</i> <u>Nota / Note:</u> Pantulan, beri 1 markah <i>Reflection, award 1 mark.</i>	2	10
		Y : Putaran 90° lawan arah jam pada pusat (0, 1) <i>Rotation of 90° anticlockwise about the centre (0, 1)</i> <u>Nota / Note:</u> 1. Putaran 90° lawan arah jam <u>atau</u> Putaran pada pusat (0, 1), beri 2 markah. <i>Rotation of 90° anticlockwise or Rotation about the centre (0, 1) award 2 marks.</i> 2. Putaran, beri 1 markah. <i>Rotation, award 1 mark.</i>	3	
	(b)	(i) $(-1, 4) \rightarrow (-2, 0)$ Note : $(1, -4)$ seen, award 1 mark.	2	
		(ii) $(2, -2) \rightarrow (2, -7)$ Note : $(7, -2)$ seen, award 1 mark.	2	
	(c)	Ya. Semua panjang sisi sepadan dan sudut sepadan adalah sama. <i>Yes. All corresponding side lengths and corresponding angles are equal.</i>	1	

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Soalan	Skema markah	Markah	
		Sub Markah	Jumlah Markah
16	(a) (i)	 Nota / Notes : 7 bucu dan 6 sisi, yang betul, dapat 1 markah 7 vertices and 6 sides, which are correct, get 1 mark	15
	(ii)	2 + 3 + 2 + 6 + 1 + 2 <u>atau</u> 16 km	
		$\frac{16 \text{ km}}{(60) \text{ km j}^{-1}} \times 60$	
		16 minit / 16 minutes	
	(b)	$\frac{22}{7} \times 3^2 \times 14$ <u>atau</u> $70 \times 50 \times 60$	
		$210000 \times \frac{90}{100}$ <u>atau</u> 189000 cm^3	
		$396 \times (120 \times 4)$	
		190080 cm^3	
		$189000 \text{ cm}^3 < 190080 \text{ cm}^3$, isi padu air di dalam bekas tidak mencukupi untuk menampung semua keperluan	
		$189000 \text{ cm}^3 < 190080 \text{ cm}^3$, the volume of drink in the container is not enough to accommodate the needs.	
	(c)	 $\left(\frac{6}{10} \times \frac{4}{9}\right) + \left(\frac{4}{10} \times \frac{6}{9}\right)$ $\frac{8}{15}$	

Soalan		Skema markah		Markah	
				Sub Markah	JumlahMarkah
	(d)	(i)	$h = 1$	1	
		(ii)	$\frac{1}{4} \times 120 = 30$	1	
17	(a)	(i)	Nota: - Jika $n(H \cap T) = 9$ dan $n(H \cap L) = 29$ dan $n(L \cap T) = 19$, beri 2 markah. $n(H \text{ sahaja}) = 81$ dan $n(T \text{ sahaja}) = 31$ dan $n(L \text{ sahaja}) = 31$, beri 2 markah - Jika $n(H \cap T) = 9$ atau $n(H \cap L) = 29$ atau $n(L \cap T) = 19$, beri 1 markah. $n(H \text{ sahaja}) = 81$ atau $n(T \text{ sahaja}) = 31$ atau $n(L \text{ sahaja}) = 31$, beri 1 markah	3	15
	(ii)	143	1		
	(b)	$(4 \times 8^3) + (0 \times 8^2) + (6 \times 8^1) + (3 \times 8^0)$ <u>atau</u> $(1 \times 7^4) + (0 \times 7^3) + (2 \times 7^2) + (0 \times 7^1) + (0 \times 7^0)$ <u>atau</u> setara 2099 <u>dan</u> 2499 (kedua-dua) Komputer riba A Komputer riba A lebih murah daripada komputer riba B.	1 1 1 1		
	(c)	(Bayaran minimum) $* 2099 \times \frac{5}{100} = 104.95$	1		
		(Baki belum dijelaskan) $* 2099 - * 104.95 = 1994.05$	1		
		(Faedah yang dikenakan) $1994.05 \times \left[\frac{18}{100} \times \frac{15}{365} \right] = 14.75$	1		
		(Jumlah terkini bulan Februari) $1994.05 + 14.75$	1		
		2008.80	1		
	(d)	23.04×35.72 <u>atau</u> $(23.04 \times 35.72) - 100$ 723	1 1		

15