

1449/2
Peraturan
Pemarkahan
Matematik
Kertas 1 & 2
Oktober
2014



KEMENTERIAN
PENDIDIKAN
MALAYSIA

<http://cikguadura.wordpress.com/>

**BAHAGIAN PENGURUSAN
SEKOLAH BERASRAMA PENUH DAN SEKOLAH KECEMERLANGAN
KEMENTERIAN PENDIDIKAN MALAYSIA**

**PENTAKSIRAN DIAGNOSTIK SBP 2014
PEPERIKSAAN PERCUBAAN SPM**

MATEMATIK

Kertas 1 & Kertas 2
<http://cikguadura.wordpress.com/>

PERATURAN PEMARKAHAN

UNTUK KEGUNAAN PEMERIKSA SAHAJA

AMARAN

Peraturan Pemarkahan ini **SULIT** dan **Hak Cipta Sekolah Berasrama Penuh**. Kegunaannya khusus untuk pemeriksa yang berkenaan sahaja. Sebarang maklumat dalam peraturan pemarkahan ini tidak boleh dimaklumkan kepada sesiapa. Peraturan Pemarkahan ini juga tidak boleh dikeluarkan dalam apa jua bentuk penulisan dan percetakan.

Peraturan Pemarkahan ini mengandungi 11 halaman bercetak

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KERTAS 1

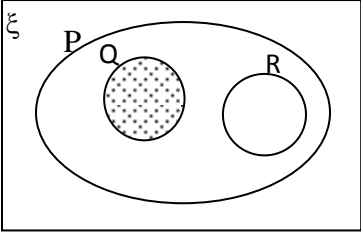
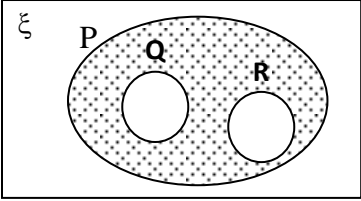
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QUESTION	ANSWER	QUESTION	ANSWER
1	C	21	D
2	C	22	A
3	B	23	B
4	D	24	B
5	B	25	C
6	A	26	C
7	D	27	C
8	C	28	D
9	C	29	C
10	B	30	A
11	A	31	D
12	B	32	A
13	D	33	A
14	C	34	C
15	B	35	B
16	D	36	C
17	A	37	D
18	A	38	D
19	B	39	A
20	A	40	B

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KERTAS 2

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Q	SOLUTION AND MARK SCHEME	MARKS	
1(a)		P1	
(b)		P2	3
2 (a)	Identify $\angle RWS$ or $\angle SWR$	P1	
(b)	$\tan \angle RWS = \frac{10}{8}$ equivalent 51.3° or $51^\circ 20'$	K1 N1	3
3	$2k^2 + 5k - 12 = 0$ $(2k - 3)(k + 4) = 0$ $k = \frac{3}{2}, -4$	K1 K1 N1 N1	4
4	$6x + 4y = 34$ or equivalent $7x = 42$ or equivalent $x = 6, y = -\frac{1}{2}$	K1 K1 N1 N1	4
5	Volume of cylinder : $\frac{22}{7} \times 7 \times 7 \times 15$ Volume of cone : $\frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \times 5$ $2310 - 256\frac{2}{3}$ $2053\frac{1}{3}$	K1 K1 K1 N1	4

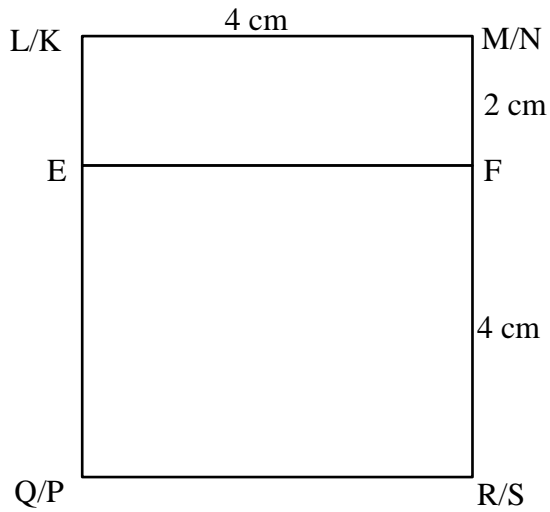
6(a)	(i) True (ii) False	P1 P1	5
(b)	Premis 2 : 5 994 is multiple of 6	P1	
(c)	Implication 1: If $m > n$, then $m+1 > n+1$ Implication 2: If $m+1 > n+1$,then $m > n$	P1 P1	
7(a)	(a) $k = 7$	P1	7
(b)	(b) $m_{PQ} = m_{OR} : \frac{7-0}{4-0} = \frac{7}{4}$ $y = \frac{7}{4}x - 7 @ 4y = 7x - 28$	P1 N1	
(c)	(c) $4(0) = 7x - 28$ x -intercept = 4	P1 N1	
8 (a)	$S = \{ (P,1), (P,3), (P,4), (P,7), (P,8), (E,1), (E,3), (E,4), (E,7), (E,8), (N, 1), (N,3), (N,4), (N,7), (N,8) \}$	P1	5
(b)(i)	$\{(E, 1)(E, 3)(E, 4)(E, 7)(E, 8)(P, 3)(P, 7)(N, 3)(N, 7)\}$	K1	
(ii)	$\frac{9}{15} = \frac{3}{5}$	N1	
	$\{(P,4), (P,8), (N,4), (N,8) \}$ $\frac{4}{15}$	K1 N1	
9(a)	$\frac{120}{360} \times 2 \times \frac{22}{7} \times 12$ or $\frac{90}{360} \times 2 \times \frac{22}{7} \times 6$ $25\frac{1}{7} + 6 + 9\frac{3}{7} + 6 + 12$ $58\frac{4}{7}$	K1 K1 N1	6
(b)	$\frac{120}{360} \times \frac{22}{7} \times 12 \times 12$ or $\frac{90}{360} \times \frac{22}{7} \times 6 \times 6$ $150\frac{6}{7} - 28\frac{2}{7}$ $122\frac{4}{7}$	K1 K1 N1	

10(a)	5	P1	
(b)	$\frac{1}{2} \times (3 + 5) \times 4$ or (5×5) 16 + 25 41 m	K1 K1 N1	
(c)	$\frac{u - 5}{12 - 9} = 2$ u = 11	K1 N1	6
11(a)	$n = 15$ $m = 4$	P1 P1	
(b)	$\begin{pmatrix} 3 & -1 \\ 3 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -21 \\ 9 \end{pmatrix}$ $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{15} \begin{pmatrix} 4 & 1 \\ -3 & 3 \end{pmatrix} \begin{pmatrix} -21 \\ 9 \end{pmatrix}$ $= \frac{1}{15} \begin{pmatrix} -75 \\ 90 \end{pmatrix}$ $= \begin{pmatrix} -5 \\ 6 \end{pmatrix}$ $x = -5$ $y = 6$	K1 K1 K1 N1 N1	7

<p>12(a)</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">-1</td> <td style="padding: 5px;">2</td> </tr> <tr> <td style="padding: 5px;">y</td> <td style="padding: 5px;">8</td> <td style="padding: 5px;">-16</td> </tr> </tbody> </table> <p>(b) Graph: Axes drawn in correct directions , uniform scale in $-3 \leq x \leq 3$</p> <p>All 6 point and any *2 point correctly plotted or curve passes through these point $-3 \leq x \leq 3$.</p> <p>A smooth and continuous curve without any straight line and passes through all 9 correct points using the given scale for $-3 \leq x \leq 3$</p> <p>Note: 1) 6 or 7 point correctly plotted, awarded K1</p> <p style="padding-left: 40px;">2) Ignore curve out of range.</p> <p style="padding-left: 40px;">$y = 7 \pm 0.5$ $x = 1.9 \pm 0.1$</p>	x	-1	2	y	8	-16	<p>P1</p> <p>P1</p> <p>P1</p> <p>K2</p> <p>N1</p> <p>P1</p> <p>P1</p>	
x	-1	2							
y	8	-16							
<p>(c)</p> <p>(d)</p>	<p>Identify equation $y = -5x - 10$ Straight line $y = -5x - 10$ correctly drawn</p> <p style="padding-left: 40px;">$x = 2.3 \pm 0.1$ $= -2.3 \pm 0.1$</p>	<p>K1</p> <p>K1</p> <p>N1</p> <p>N1</p>	<p>12</p>						
<p>13(a)</p> <p>(b)</p>	<p>(i) (4 , 1) (ii) (13, 4) (iii) (7 , -1)</p> <p>Note: award (ii) (10,6) P1 (iii) (4,1) P1</p> <p>N: Reflection at $y = 6$ Note : Reflection award P1</p> <p>M: Enlargement at point A (8,1) with scale factor 2 Note: (i) Enlargement with scale factor 2 award P2 (ii) Enlargement at point A award P2 (iii) Enlargement award P1</p>	<p>P1</p> <p>P2</p> <p>P2</p> <p>P2</p> <p>P3</p>							

(c)	<p>Area of shaded region = 30</p> <p>Area of shaded region + area of object = 2^2 (area object) $30 + \text{area of object} = 4$ (area of object) $3(\text{area of object}) = 30$ Area of object = 10</p> <p>Area of pentagon FGHIJ = 10 cm^2</p>	K1																																									
14 (a)	<table border="1" data-bbox="318 520 1334 1010"> <thead> <tr> <th>Class interval <i>Selang kelas</i></th> <th>Frequency <i>Kekerapan</i></th> <th>Cumulative frequency <i>Kekerapan longgokan</i></th> <th>Upper boundary <i>Sempadan atas</i></th> </tr> </thead> <tbody> <tr><td>10 - 19</td><td>0</td><td>0</td><td>19.5</td></tr> <tr><td>20 - 29</td><td>1</td><td>1</td><td>29.5</td></tr> <tr><td>30 - 39</td><td>3</td><td>4</td><td>39.5</td></tr> <tr><td>40 - 49</td><td>5</td><td>9</td><td>49.5</td></tr> <tr><td>50 - 59</td><td>7</td><td>16</td><td>59.5</td></tr> <tr><td>60 - 69</td><td>11</td><td>27</td><td>69.5</td></tr> <tr><td>70 - 79</td><td>9</td><td>36</td><td>79.5</td></tr> <tr><td>80 - 89</td><td>3</td><td>39</td><td>89.5</td></tr> <tr><td>90 - 99</td><td>1</td><td>40</td><td>99.5</td></tr> </tbody> </table> <p>Class interval Frequency Cumulative frequency Upper boundary</p> <p>(b)</p> <p>Axes drawn in correct direction. Uniform scales for $19.5 \leq x \leq 99.5$ and $0 \leq y \leq 40$.</p> <p>*8 points correctly plotted Note : 6 or 7 points correctly plotted, award K1</p> <p>(c)</p> <p>Smooth and continuous curve without any straight line passes through all 8 correct points for $19.5 \leq x \leq 99.5$.</p> $\text{Mean} = \frac{1(24.5) + 3(34.5) + 5(44.5) + 7(54.5) + 11(64.5) + 9(74.5) + 3(84.5) + 1(94.5)}{40}$ $= \frac{2460}{40}$ $= \text{RM}61.50$ <p>Note : Allow two mistakes in midpoint for K1</p> <p>(d)</p> $\frac{3}{4} \times 40 = 30$ <p>Third quartile = RM71.50</p>	Class interval <i>Selang kelas</i>	Frequency <i>Kekerapan</i>	Cumulative frequency <i>Kekerapan longgokan</i>	Upper boundary <i>Sempadan atas</i>	10 - 19	0	0	19.5	20 - 29	1	1	29.5	30 - 39	3	4	39.5	40 - 49	5	9	49.5	50 - 59	7	16	59.5	60 - 69	11	27	69.5	70 - 79	9	36	79.5	80 - 89	3	39	89.5	90 - 99	1	40	99.5	P1 P1 P1 P1 P1 K2 N1 K2 N1	12
Class interval <i>Selang kelas</i>	Frequency <i>Kekerapan</i>	Cumulative frequency <i>Kekerapan longgokan</i>	Upper boundary <i>Sempadan atas</i>																																								
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60 - 69	11	27	69.5																																								
70 - 79	9	36	79.5																																								
80 - 89	3	39	89.5																																								
90 - 99	1	40	99.5																																								

15(a)



Correct shape of two rectangles

$$LE = MF < EP = FR < LM = QR$$

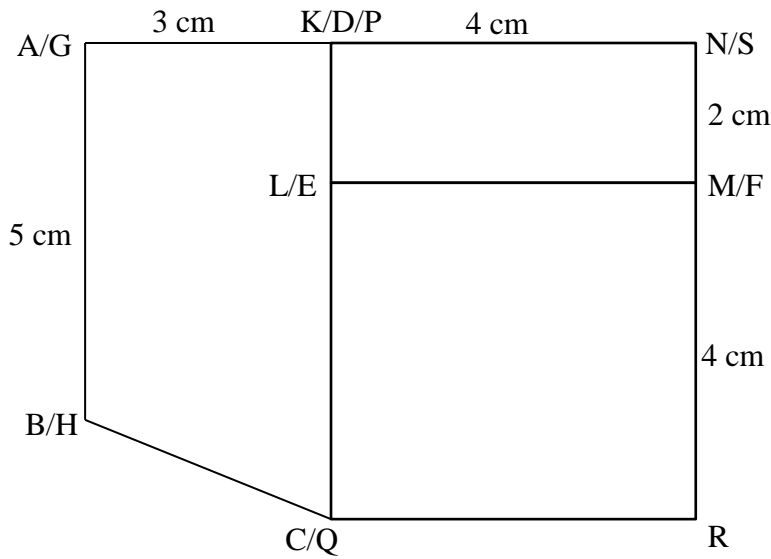
Correct measurement ± 0.2 cm (one way) and all angles at the vertices of rectangles = $90^{\circ} \pm 1^{\circ}$

K1

K1

N1

(b)(i)



Correct shape of two rectangles and one trapezium

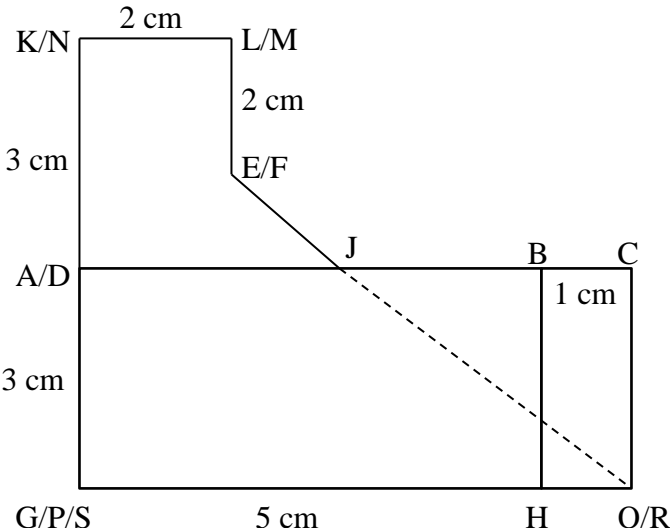
$$AB < KQ = NR$$

Correct measurement ± 0.2 cm (one way) and all angles at the vertices of rectangles = $90^{\circ} \pm 1^{\circ}$

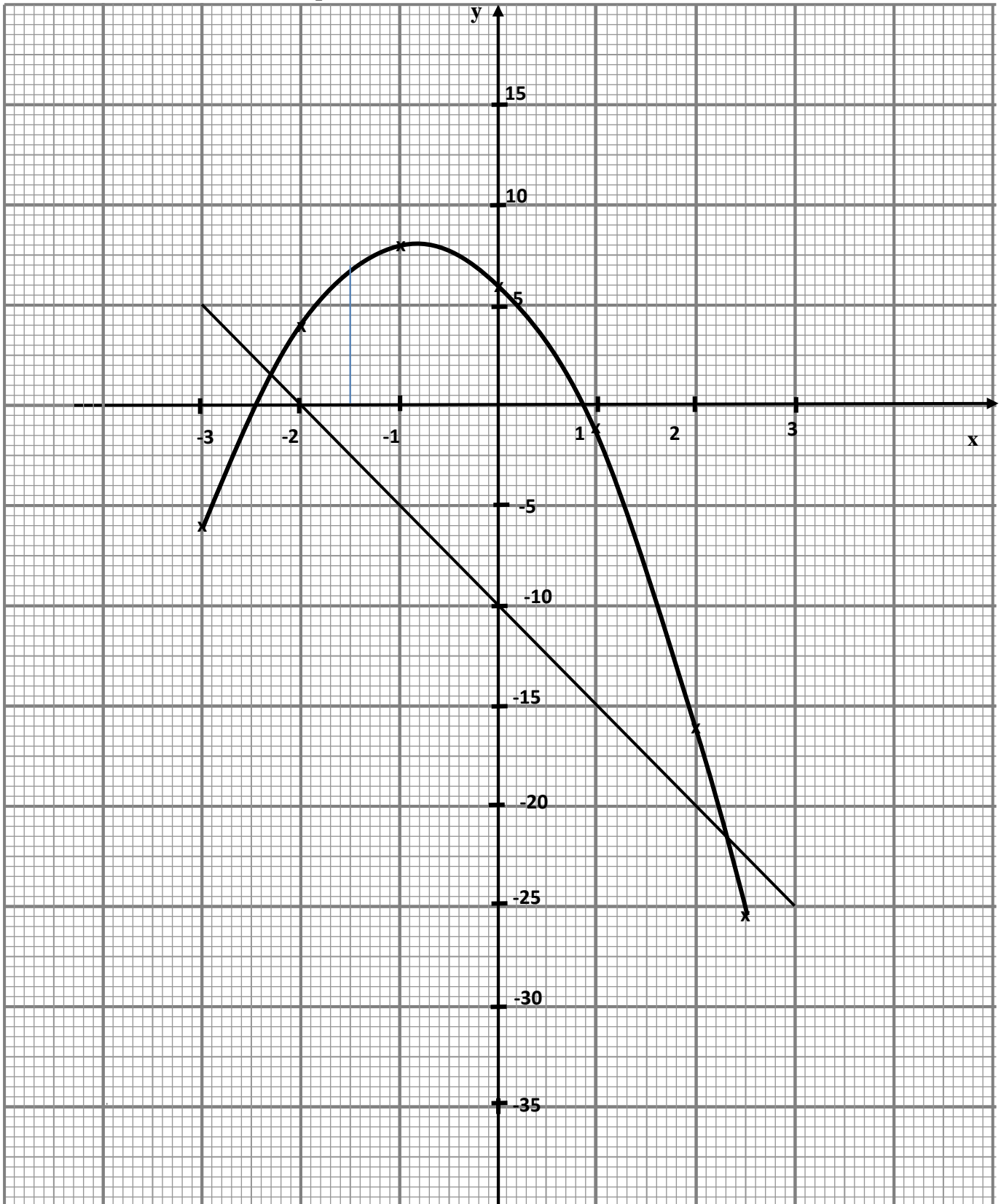
K1

K1

N2

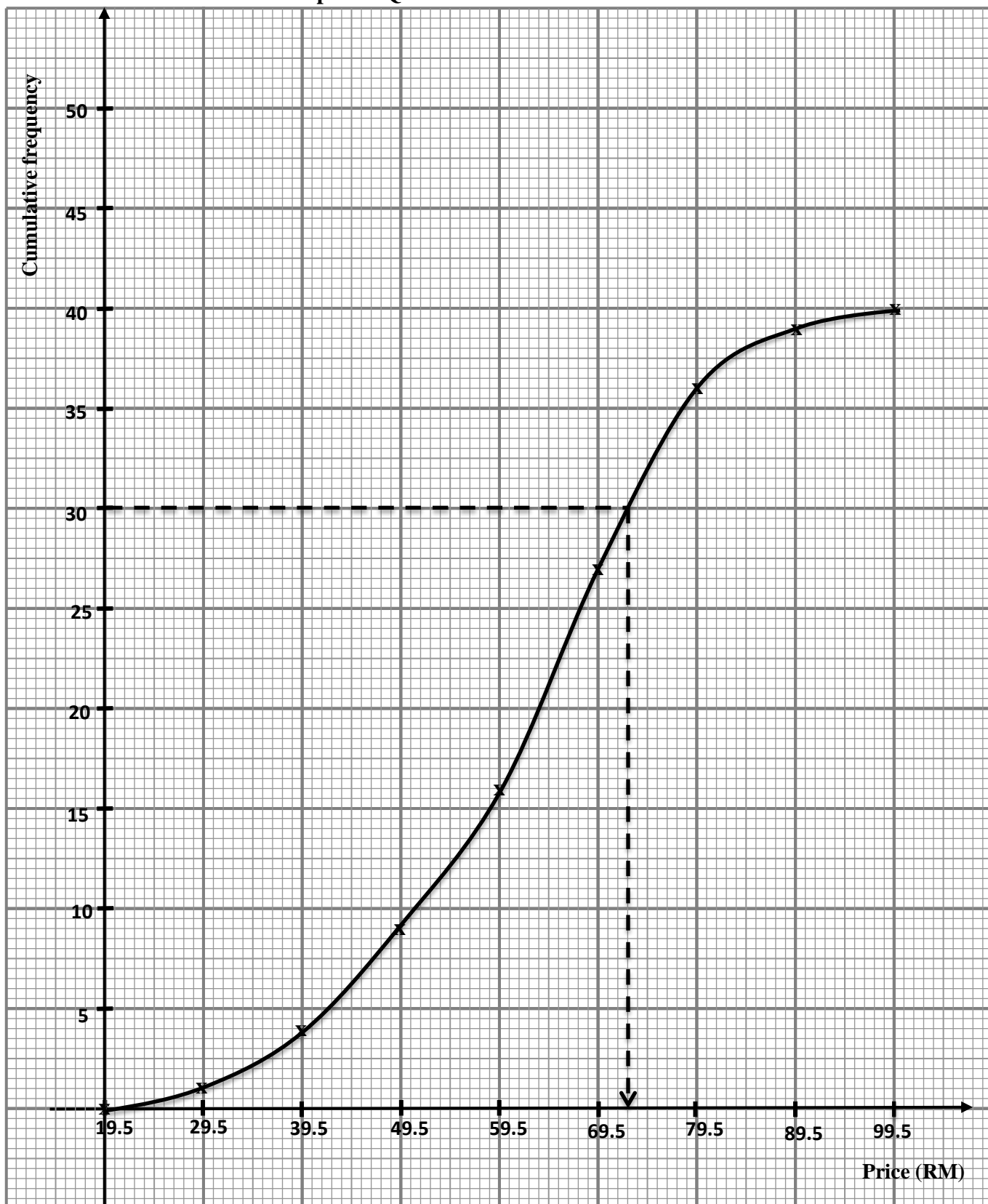
(ii)	 <p>Correct shape of two hexagons Dotted line $LE < KA = DP$ Measurements correct to ± 0.2 cm (one way) and all angles at the vertices of rectangles = $90^\circ \pm 1^\circ$</p>	K1 K1 K1 N2	12
16(a)	<p>Longitude of R = $(180 - 15)^\circ$ W Location of R = $(62^\circ$ S, 165° W)</p> <p>(b) Shortest distance = $(180 - 2 \times 62) \times 60$ = 56×60 = 3360 nautical miles</p> <p>(c) Distance from P to Q = $(75 - 15) \times 60 \times \cos 62^\circ$ = $60 \times 60 \times \cos 62^\circ$ = 1690.1 nautical miles</p> <p>(d)(i) Distance from Q to V = speed \times time = $630 \times 7 \frac{1}{2}$ = 4725 nautical miles</p> <p>(ii) $\theta = \frac{4725}{60} = 78.75^\circ$ Latitude of V = $(78.75 - 62)^\circ$ = 16.75° N or $16^\circ 45'$ N</p>	P1 P1 K1 K1 N1 K1 K1 N1 K1 N1 K1 N1	12

Graph for Question 12/ Graf untuk soalan 12



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Graph for Question 14/ Graf untuk soalan 14



more available, check back soon