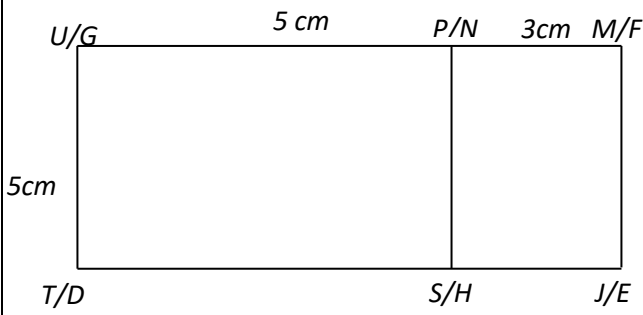| SOALAN	PECAHAN	PERATURAN	MARKAH	
1.			K1 N2	3
2.		$\dfrac{720}{(t+4)} = 12t$	K1	
		$12t^2 + 48t - 720 = 0$ OR equivalent	K1	
		$(t-6)(t+10) = 0$	K1	
		$t = 6$	N1	4
3.		x = 2y	K1	
		(x – 12) = 6(y – 12)	K1	
		4y = 60		
		y = 15	N1	
		x = 30	N1	4
4.		(a) < XZY or < YZX	K1	
		(b) $\tan\theta = \dfrac{5}{8}$	K1	3
		$\theta = 32.01^0$	N1	
5.	(a)	$-z(1) - 5(z-1) = 0$	K1	
		$z = \dfrac{5}{6}$	N1	
	(b)	$\begin{pmatrix} -\dfrac{3}{2} & 1 \\ 1 & -2 \end{pmatrix}\begin{pmatrix} p \\ q \end{pmatrix} = \begin{pmatrix} 6 \\ -8 \end{pmatrix}$	P1	
		$\begin{pmatrix} p \\ q \end{pmatrix} = \dfrac{1}{(-2)(-\frac{3}{2}) - (1)(1)}\begin{pmatrix} -2 & -1 \\ -1 & -\dfrac{3}{2} \end{pmatrix}\begin{pmatrix} 6 \\ -8 \end{pmatrix}$	K1	
		p = - 2 , q = 3	N1N1	6

6.	(a)	35 ialah nombor ganjil	P1	
		35 ialah gandaan 7	P1	
	(b)	Jika x = 5, maka 2x + 10 = 20	P1	
	(c)	luas = 2^2 x 24	K1	
		= 96	N1	5
7.	(a)	m = 3	P1	
		c = - 11	K1	
		y = 3x – 11	N1	
	(b)	0 = 3x – 11		
		Pintasan-x = $\frac{11}{3}$	K1	
			N1	5
8.	(a)	9.30 + 100 minit	K1	
		11.10 a.m	N1	
	(b)	50	P1	
		10.20 a.m	P1	
	(c)	$\frac{100}{(\frac{160}{60})}$	K1	
		37.5	N1	6
9.	(a)	S = { (4,7), (9,7), (2,7), (5,7), (4,8), (9,8), (2,8),(5,8),(4,3), (9,3), (2,3), (5,3)}	P2	
	(b)i-	S = { (2,7),(5,7), (2,3), (5,3)}	K1	
		= 4/12 @ 1/3	N1	
	ii-	S = { (4,7), (4,8), (4,3), (9,7), (9,8), (9,3),(2,8),(5,8)}	K1	6
		= 8/12 @ 2/3	N1	

10.		$\left(\frac{22}{7} \times 6^2 \times t\right) + \left(\frac{1}{2} \times \frac{4}{3} \times \frac{22}{7} \times 6^3\right) = 1584$	K1 K1 K1	
		$t = 10$	N1	4
11.	(a)	$\left(\frac{60}{360} \times 2 \times \frac{22}{7} \times 16\right)$ $ATAU$ $\left(\frac{90}{360} \times 2 \times \frac{22}{7} \times 10\right)$	K1	
		$\left(\frac{60}{360} \times 2 \times \frac{22}{7} \times 16\right) + \left(\frac{90}{360} \times 2 \times \frac{22}{7} \times 10\right) + 16 + 10$ $+ 6$	K1	
		$\frac{1354}{21}$	N1	
	(b)	$\left(\frac{60}{360} \times \frac{22}{7} \times 16^2\right) - \left(\frac{90}{360} \times \frac{22}{7} \times 10^2\right)$		
		$\frac{1166}{21}$	K1K1 N1	6
12.	(a)	<table><tr><td>X</td><td>-1</td><td>3</td></tr><tr><td>Y</td><td>12</td><td>-4</td></tr></table>	K1 K1	
	(b)	Paksi dilukis dalam arah yang betul dengan skala seragam bagi $-3 \le x \le 4$ dan $-15 \le y \le 25$.	P1	
		Kesemua 9 titik dan *2 titiknya diplot dengan betul atau lengkung itu melalui kesemua titik-titik itu bagi $-3 \le x \le 4$ dan $-15 \le y \le 25$	K2	
		Lengkung yang licin dan berterusan tanpa sebarang garis lurus, melalui kesemua 9 titik yang betul menggunakan skala yang diberi untuk $-3 \le x \le 4$ dan $-15 \le y \le 25$	N1	

	(c) i- ii- (d)	*Nota:* *1. 7 atau 8 titik diplot dengan betul, beri K1.* *2. Abai lengkung yang terkeluar dari julat skala.* −10 ≤ y ≤ -9 - 0.6 ≤ x ≤ - 0.4 Garis lurus y = x - 5 dilukis dengan betul dan tepat. 3.0 ≤ x ≤ 3.2 0.5 ≤ x ≤ 0.7	P1 P1 K2 N1 N1	12
13.	(a)i- ii- (b)i- ii- (c)	(0, 1) (4, 3) P = Pembesaran, k = $\frac{1}{2}$, pusat (-6, 0) Q = Putaran, 180^0 lawan @ ikut arah jam, pada pusat (-1, -2) $x = (\frac{1}{2})^2$ x $(60 + x)$ $x = 20$ JKLM = 20 + 60 = 80	P2 P1 P3 P3 K2 N1	12
14.	(a)	<table><tr><th>Distance (km) Jarak (km)</th><th>Frequency Kekerapan</th><th>Midpoint Titik Tengah</th></tr><tr><td>15-19</td><td>3</td><td>17</td></tr><tr><td>20-24</td><td>5</td><td>22</td></tr><tr><td>25-29</td><td>7</td><td>27</td></tr><tr><td>30-34</td><td>9</td><td>32</td></tr><tr><td>35-39</td><td>7</td><td>37</td></tr><tr><td>40-44</td><td>6</td><td>42</td></tr><tr><td>45-49</td><td>3</td><td>47</td></tr></table>	K1 K2 K1	

	(b)	$$\frac{17(3) + 22(5) + 27(7) + 32(9) + 37(7) + 42(6) + 47(3)}{3 + 5 + 7 + 9 + 7 + 6 + 3}$$ $$= \frac{1290}{40} \text{ @ } 32.25$$ © Note : 1. Allow two mistakes in *frequency for K1 2. Allow two mistakes for the multiplication of * frequency and midpoint for K1.	K2 N1	
	(c)	Graph Histogram Axes drawn in the correctl directions with uniform scales for $17 \le x \le 47$ and $0 \le y \le 9$ *7 points plotted correctly using correct values of midpoint . Note : *5 or *6 points plotted correctly, award K1. Smoothness of the graph using the given scales.	P1 K2 N1	
	(d)	Kelas mod 30 - 34	P1	12
15	(a)	Correct shape with rectangle *EHGF* and *HCBG*. All solid lines, $DH = EF > JH$ Measurements correct to ± 0.2 cm (one way) and all angles at vértices $= 90° \pm 1°$	K1 K1 N1	

(b)i-

R

3 cm

T   4 cm   V

A   H   3 cm   K

1 cm   3 cm

D   8 cm   E
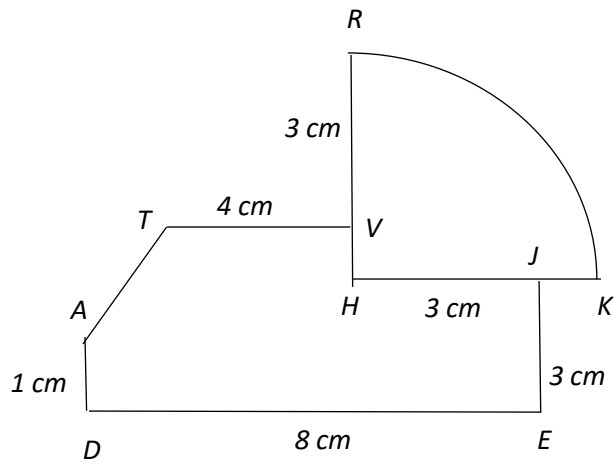
Correct shape with heptagon and quartelled *RHK*.

All solid lines.

$DE > TV > HJ = JE = RV$

The sector RK are drawn

Measurements correct to ± 0.2 cm (one way) and all angles at vértices $= 90° \pm 1°$

K1

K1

K1

N1

(b) ii-

R   5cm   Q

3 cm

V   W

1 cm

K   L

2 cm

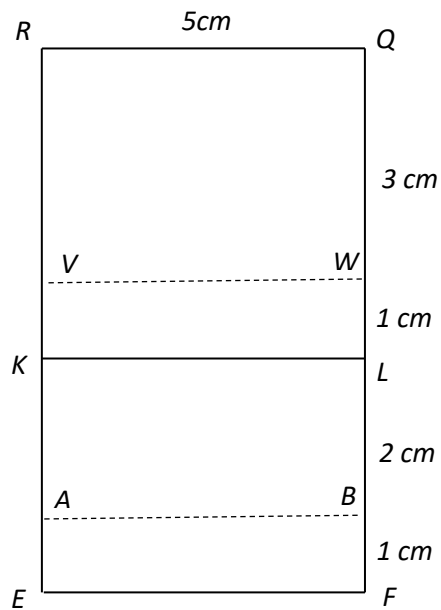A   B

1 cm
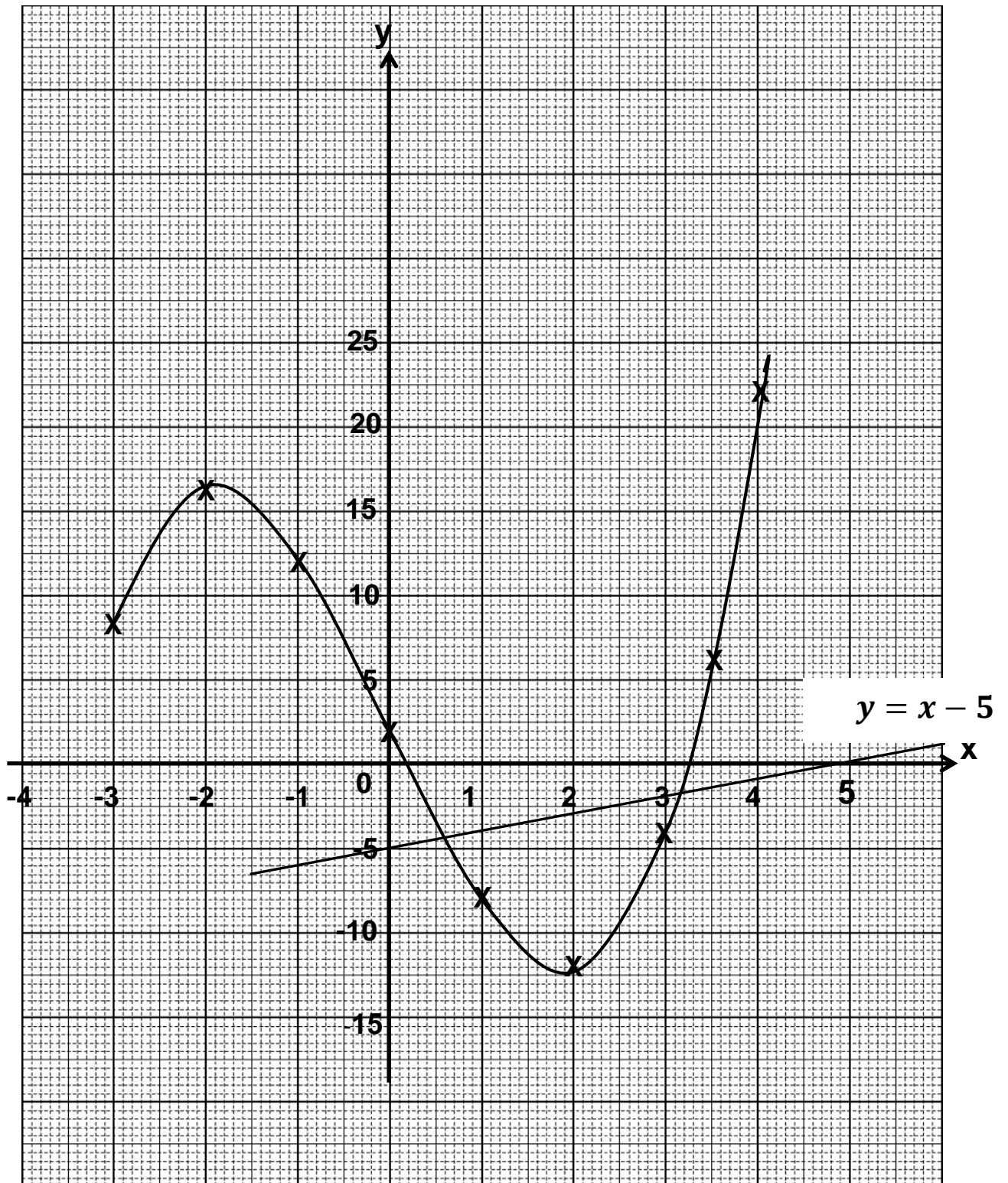
E   F

		Correct shape with rectangle *EFQR*. All solid lines. (Ignore *KL*) $V - W$ joined by a dashed line. $A - B$ joined by a dashed line. $RQ > QL > LF > BF = WL$ Measurements correct to ± 0.2 cm (one way) and all angles at vértices $= 90° \pm 1°$	K1 K1 K1 K1 N1	 12
16	(a) (b) (c) (d)	$(45^0U, 120^0B)$ $\dfrac{3900}{60}$ $65 - 45$ 20^0U $(28 + 60) \times 60 \times kos\ 45$ 3733.52 b.n $\dfrac{(3900 + 3733.52)}{450}$ 16.96 jam	K1K1K1 K1 K1 N1 K1K1 N1 K1 N1	 12

Jawapan 12(b) :

$y = x - 5$

Jawapan 14(c)