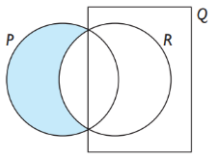
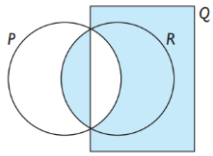
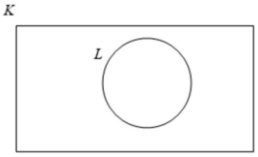
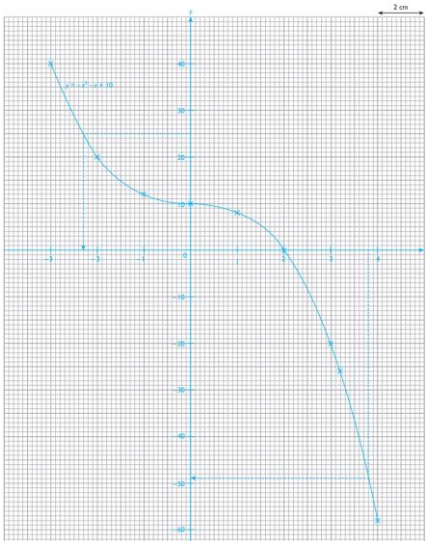
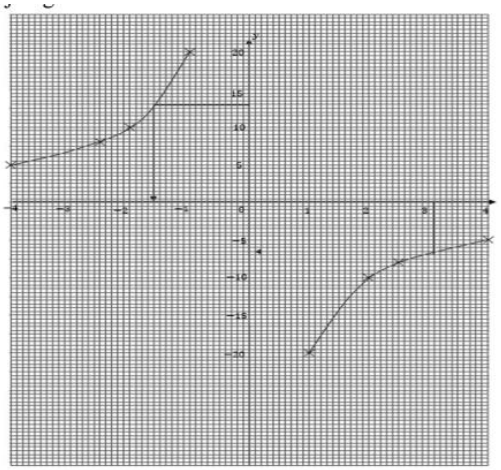
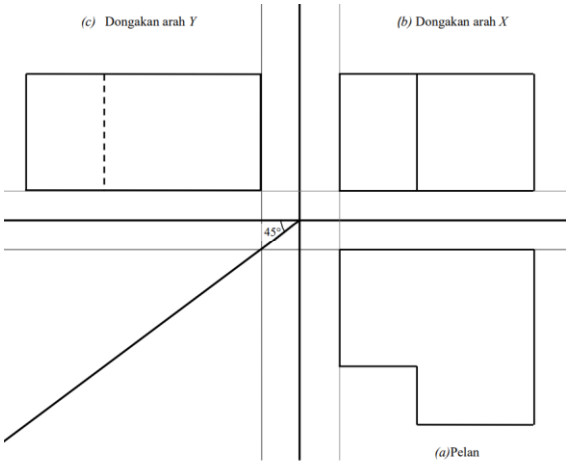
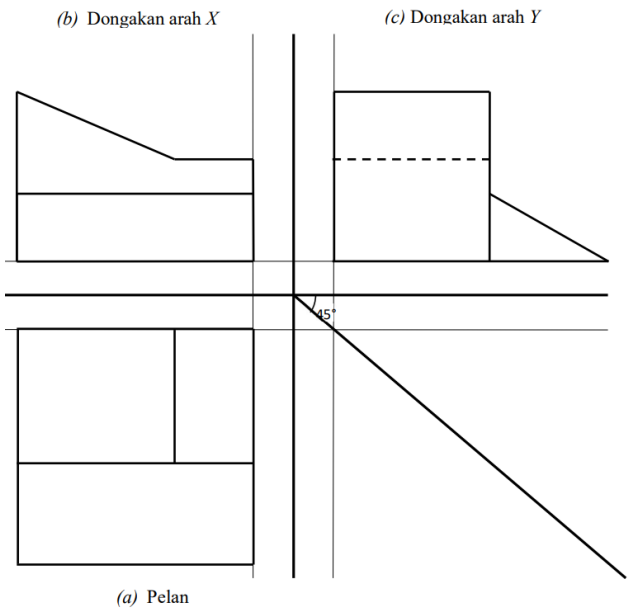
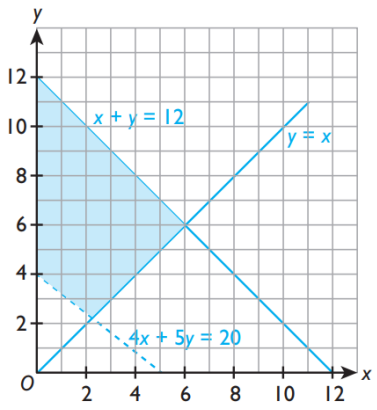
1.	a) i - {(S,R), (R,Q), (R,Q), (P,Q), (P,P), (S,P)} ii - d(P) = 4, d(Q) = 3, d(R) = 3, d(S) = 2 b) terima mana-mana jawapan yang betul * label betul, tepi betul c) Bukan Graf Mudah Kerana terdapat gelung / atau berbilang tepi	1 4 2 1 1
2.	a) $m = -\frac{1}{2}$ c = 6 $y = -\frac{1}{2}x + 6$ b) $-\frac{1}{2}(2) + 6$ Ya. Titik (2,5) berada pada garis PQ c) $m = \frac{5}{2}$ $m = \frac{9-4}{-1-(-3)}$ Ya selari	1 1 1 1 1 1 1 1
3.	a) a = 3, b = $-\frac{1}{2}$ b) k = 16 64 = 16 x^2 atau 64 = 16 p^2 p = 2 c) i– k = 3 j = $\frac{3r}{\sqrt{m}}$ ii- $\frac{3(4)}{\sqrt{16}}$ j = 3	1 , 1 1 1 1 1 1 1 1
4.	a) p = - 5 b) k = $-\frac{1}{2}$, v = 2 c) $\begin{pmatrix}4 & -2\\ 3 & -1\end{pmatrix}\begin{pmatrix}x\\ y\end{pmatrix}=\begin{pmatrix}1\\ 3\end{pmatrix}$ $\begin{pmatrix}x\\ y\end{pmatrix}=\frac{1}{(4)(-1)-(-2)(3)}\begin{pmatrix}-1 & 2\\ -3 & 4\end{pmatrix}\begin{pmatrix}1\\ 3\end{pmatrix}$ $x=\frac{5}{2},\ y=\frac{9}{2}$	1 1 , 1 1 1 1, 1

	d) $6x+4y=11$ atau setara / *or equal* $2x+3y=6$ atau setara / *or equal* $\begin{bmatrix}6 & 4\\ 2 & 3\end{bmatrix}\begin{bmatrix}x\\ y\end{bmatrix}=\begin{bmatrix}11\\ 6\end{bmatrix}$ $\begin{bmatrix}x\\ y\end{bmatrix}=\frac{1}{6(3)-4(2)}\begin{bmatrix}3 & -4\\ -2 & 6\end{bmatrix}\begin{bmatrix}11\\ 6\end{bmatrix}$ $x=$ RM0.90 atau */or* 90 sen $y=$ RM1.40 Beza harga = 1.40 – 0.9 = 0.5	1 1 1 1 1 1 1
5.	a) i)  ii)  b) i)  ii) $X\cap Y\cup Z$ or $Z\cup(X\cap Y)$ c) i) 17 ii) 10 iii) 15 d) 18 – 3 – 8 = 7 50 – 3 – 7 – 8 – 4 - 5 – 8 – 7 = 8 P’ ATAU Q’ = 8 + 8 + 16	1 2 1 2 1 1 1 1 1 1 1
6.	a) p = 20 q = - 58	1 1

	b)  c) y = – 49 , x = –2.3	4 1, 1
7	a) 8, - 10 b)  c) (i) -12.5 (ii) 3.1	1, 1 4 1 1
8.	a) S ={(B,N), (B,E), (B,G), (B,A), (B,R), (B,A), (I,N), (I,E), (I,G), (I,A), (I,R), (I,A), (N,N), (N,E), (N,G), (N,A), (N,R), (N,A), (A,N), (A,E), (A,G), (A,A), (A,R), (A,A)} b) P(dua huruf vokal/two vowels) = $\frac{2}{4} \times \frac{1}{6} = \frac{1}{4}$ c) P(dua kad yang sama huruf) = P(E, E) + P(A, A) = $\frac{2}{10}\ \frac{1}{9} + \frac{2}{10} \times \frac{1}{9}$ = $\frac{2}{45}$	2 2 1, 1 1
9	a) Benar/True b) Akas : Jika $\sqrt[3]{x}$ ialah integer maka x ialah kuasa 3 sempurna Benar Songsangan : Jika x bukan kuasa 3 sempurna maka $\sqrt[3]{x}$ bukan integer Benar c) n(n – 1)	1 1 1 1 1 1

	n = 1,2,3,4,... d) i . 6 ialah nombor genap ii . y ialah nombor positif iii . sin 30º ≠ 0.5	1 1 1 1
10	a) Luas kawasan berlorek $= (\frac{90}{360} \times \frac{22}{7} \times 7^2)$ $= (\frac{30}{360} \times \frac{22}{7} \times 7^2)$ $= 70 - 38\frac{1}{2} + 12\frac{5}{6}$ $= 44\frac{1}{3}$ b) Perimeter kawasan berlorek $= (\frac{90}{360} \times 2 \times \frac{22}{7} \times 7)$ $= (\frac{30}{360} \times 2 \times \frac{22}{7} \times 7)$ = 10 +7+3+7+7+11 +3.67 = 48.67	1 1 1 1 1 1 1 1
11	Isipadu gabungan $= \frac{1}{2} \times (18 + 10) \times 6 \times 7)$ $= \frac{1}{2} \times \frac{22}{7} \times 3.5 \times 6)$ = 588 + 155.5 = 703.5	1 1 1 1
12	a) Matematik = 98 Sejarah = 45 98 – 45 = 53 b) 98 + 45 + 70 + 90 + 82 385_{10} 3020_5	1 1 1 1 1 1
13		3 3 4

14	 (a) Pelan	3 3 4
15	(i) $y > 2x - 8$ (ii) $y \geq -4x - 8$ (iii) $y \leq 0$	1 1 1
16	(a) $4x + 5y > 20$, $x + y \leq 12$, $y \geq x$ (b)  (c) 6	3 3 1
17	**Katakan m ialah bilangan peket beras basmathi dan n ialah bilangan peket beras wangi.** ***Let m be the number of packets of basmathi rice and n be the number of packets of fragrant rice.*** **$40m + 50n = 410 \rightarrow 4m + 5n = 41$** **$5m + 10n = 70 \rightarrow m + 2n = 14$** $\begin{bmatrix} 4 & 5 \\ 1 & 2 \end{bmatrix}\begin{bmatrix} m \\ n \end{bmatrix} = \begin{bmatrix} 41 \\ 14 \end{bmatrix}$ $\begin{bmatrix} m \\ n \end{bmatrix} = \frac{1}{4(2) - 5(1)}\begin{bmatrix} 2 & -5 \\ -1 & 4 \end{bmatrix}\begin{bmatrix} 41 \\ 14 \end{bmatrix}$ $= \frac{1}{3}\begin{bmatrix} 12 \\ 15 \end{bmatrix}$ $= \begin{bmatrix} 4 \\ 5 \end{bmatrix}$	1 1 1

	Encik Koh membeli 4 peket beras basmathi dan 5 peket beras wangi. ***Mr Koh bought 4 packets of basmathi rice and 5 of packets of fragrant rice***	1 1
18	**(a) Julat/Range = 98 – 92 = 6** **Julat antara kuartil/Interquartile range** **= 98 – 95 = 3** (b) **Idris:** $\text{Min/}Mean = \frac{92 + 95 + 97 + 98 + 98}{5}$ $= 96$ $\text{Sisihan piawai/}Standard\ deviation = \sqrt{\frac{92^2 + 95^2 + 97^2 + 98^2 + 98^2}{5} - 96^2}$ $= \sqrt{5.2}$ $= 2.280$ **Khairul:** $\text{Min/}Mean = \frac{97 + 93 + 97 + 98 + 95}{5}$ $= 96$ $\text{Sisihan piawai/}Standard\ deviation = \sqrt{\frac{97^2 + 93^2 + 97^2 + 98^2 + 95^2}{5} - 96^2}$ $= \sqrt{3.2}$ $= 1.789$ **(c) Khairul layak dipilih /** ***Khairul is more suitable to be chosen*** **Kerana sisihan piawainya lebih kecil /** ***His standard deviation is smaller***	1 2 1 1 1 1 1 1 1
19	**(a) Cukai jalan/*Road tax* = RM200 + (1 799 – 1 600) × RM0.40** **= RM200 + RM79.60** **= RM279.60** **(b)** (i) RM1 000 yang pertama / *The first* RM1 000 — RM339.10 (ii) RM26 × 105 (Setiap RM1 000 baki/*Each* RM1 000 *balance*) — RM2 730.00 (iii) Premium asas/*Basic premium* = (i) + (ii) — RM3 069.10 (iv) NCD 55% = 0.55 × RM3 069.10 — RM1 688.01 (v) Premium kasar/*Gross premium* = (iii) – (iv) — RM1 381.09	1 1 1 1 1 1 1 1
20	**(a) 15** **(b)** $\frac{25-15}{5} = 2$ **(c)** $120 = \frac{1}{2} \times [\,12 + (12 - t)] \times 15$ **t = 8**	1 1, 1 3 1

21	**S : Membeli telefon pintar** **M : berharga RM 4 500 dan memerlukan simpanan bulanan RM 500** **A : Simpanan bulanan RM 500 boleh dicapai daripada pendapatan bulanan RM 5 800** **R : RM 500 daripada pendapatan bulanan RM 5 800 ialah 0.09%** **T : 6 bulan**	1 1 1 1 1
22	**(a) Aliran Tunai = Pendapatan Aktif + Pendapatan Pasif – Perbelanjaan Tetap – Perbelanjaan Tidak Tetap** **= 3300 + 410 – 1980 – 1358 - (15% × gaji)** **= 3300 + 410 – 1980 – 1358 - 495** **= - 123** **(b) Tidak bijak merancang kewangan** **Aliran Tunai negatif** **Lebihan belanja sebanyak 123**	 2 1 1 1 1 1