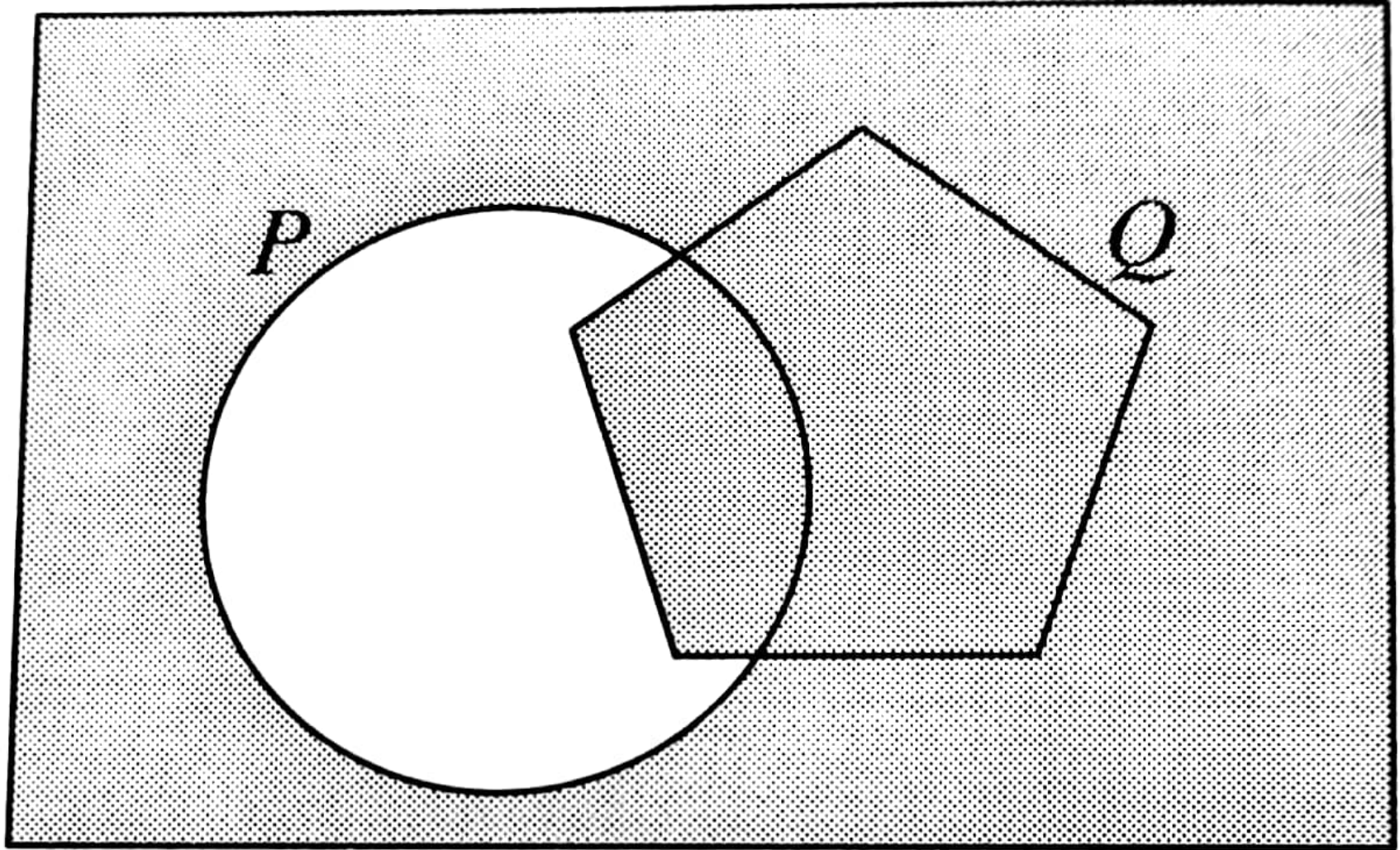


(a) ξ



(b) (i) Set $(B \cup C)'$

(ii) Set $A' \cap B \cap C$

$$m = \frac{2 - (-4)}{9 - 0}$$
$$= \frac{2}{3}$$

Gantikan $m = \frac{2}{3}$ dan $(-6, 0)$ ke dalam $y = mx + c$:

$$0 = \frac{2}{3}(-6) + c$$

$$c = 4$$

$\therefore$ Persamaan garis lurus AB ialah $y = \frac{2}{3}x + 4$.

$$y = 5 \cos nx + c$$

Didapati graf beranjak 2 unit secara menegak ke atas paksi- x .

$$\text{Maka, } c = 2$$

$$n = \text{Tempoh}$$

$$\frac{360^\circ}{n} = 240^\circ$$

$$n = \frac{3}{2}$$

$$\begin{aligned} p &= 2 + 5 \\ &= 7 \end{aligned}$$

$$\therefore c = 2, n = \frac{3}{2}, p = 7$$

$$(3x - 10)(7x) = 2\,184$$

$$21x^2 - 70x - 2\,184 = 0$$

$$\div 7: \quad 3x^2 - 10x - 312 = 0$$

$$(3x + 26)(x - 12) = 0$$

$$3x + 26 = 0 \quad \text{atau} \quad x - 12 = 0$$

$$x = -\frac{26}{3}$$

$$x = 12$$

$$x > 0, x = 12$$

Bilangan kerusi yang dibeli

$$= 3(12) - 10$$

$$= 26$$

Luas permukaan hemisfera = 693 cm²

$$\frac{1}{2} \times 4\pi j^2 = 693$$

$$2 \times \frac{22}{7} \times j^2 = 693$$

$$j^2 = 110.25$$

$$j = 10.5 \text{ cm}$$

Isi padu gabungan pepejal

= Isi padu hemisfera + Isi padu silinder

$$= \frac{1}{2} \left(\frac{4}{3} \times \frac{22}{7} \times 10.5^3 \right) + \left(\frac{22}{7} \times 10.5^2 \times 5 \right)$$

$$= 2\,425.5 + 1\,732.5$$

$$= 4\,158 \text{ cm}^3$$

(a) Palsu, kerana $6p^2 + 8p$ bukan pernyataan.
False, because $6p^2 + 8p$ is not a statement.

(b) $6 = 7(1^3) - 1^2$

$$52 = 7(2^3) - 2^2$$

$$180 = 7(3^3) - 3^2$$

$$432 = 7(4^3) - 4^2$$

$\vdots$

$$\therefore 7n^3 - n^2, \text{ dengan } n = 1, 2, 3, 4, \dots$$

Bilangan ahli lelaki

$$= 412_5$$

$$= (4 \times 5^2) + (1 \times 5^1) + (2 \times 5^0)$$

$$= 107_{10}$$

Bilangan ahli perempuan

$$= 103_7$$

$$= (1 \times 7^2) + (0 \times 7^1) + (3 \times 7^0)$$

$$= 52_{10}$$

$$107_{10} - 52_{10} = 55_{10}$$

4	55	
4	13	... 3
4	3	... 1
	0	... 3



$$\therefore \text{Beza bilangan ahli} = 313_4$$

Pendapatan bercukai

Chargeable income

= Jumlah pendapatan tahunan – Pengecualian cukai
– Pelepasan cukai

Total annual income – Tax exemption – Tax relief

= RM63 700 – RM200 – (RM9 000 + RM1.800
+ RM4 000 + RM6 200 + RM1 500)

= RM41 000

Cukai bagi RM35 000 pertama = RM600

Tax on the first RM35 000

Cukai atas baki berikutnya

Tax on the next balance

= (RM41 000 – RM35 000) × 8%

= RM480

Cukai pendapatan yang perlu dibayar

Income tax payable

= RM600 + RM480

= RM1 080

Katakan x = harga sebuah pasu besar,
 y = harga sebuah pasu kecil.

$$3x + 5y = 37.0$$

$$4x + y = 27.8$$

$$\begin{bmatrix} 3 & 5 \\ 4 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 37.0 \\ 27.8 \end{bmatrix}$$

$$\begin{bmatrix} x \\ y \end{bmatrix} = \frac{1}{3(1) - 5(4)} \begin{bmatrix} 1 & -5 \\ -4 & 3 \end{bmatrix} \begin{bmatrix} 37.0 \\ 27.8 \end{bmatrix}$$

$$= \frac{1}{-17} \begin{bmatrix} 1(37.0) - 5(27.8) \\ -4(37.0) + 3(27.8) \end{bmatrix}$$

$$= \frac{1}{-17} \begin{bmatrix} -1.02 \\ -64.6 \end{bmatrix}$$

$$= \begin{bmatrix} 6 \\ 3.8 \end{bmatrix}$$

$$x = 6, y = 3.8$$

$\therefore$ Harga sebuah pasu besar = RM6

Harga sebuah pasu kecil = RM3.80

$$(a) \quad S = \{(N, 1), (N, 2), (N, 3), (E, 1), (E, 2), (E, 3), \\ (X, 1), (X, 2), (X, 3), (T, 1), (T, 2), (T, 3)\}$$

(b) (i) $P(\text{satu huruf X dan satu nombor ganjil})$

$$= \frac{1}{4} \times \frac{2}{3}$$

$$= \frac{1}{6}$$

(ii) $P(\text{huruf konsonan dan nombor genap} \\ \textbf{tidak} \text{ dipilih bersama})$

$$= P(\text{huruf konsonan dan nombor ganjil}) \\ + P(\text{huruf vokal dan nombor genap})$$

$$= \left(\frac{3}{4} \times \frac{2}{3} \right) + \left(\frac{1}{4} \times \frac{1}{3} \right)$$

$$= \frac{1}{2} + \frac{1}{12}$$

$$= \frac{7}{12}$$

(a) (i) Bayaran pampasan

Amount of compensation

$$= \text{RM}180\,000 - \text{RM}4\,000$$

$$= \text{RM}176\,000$$

(ii) Jumlah insurans yang harus dibeli

Amount of required insurance

$$= 85\% \times \text{RM}760\,000$$

$$= \text{RM}646\,000$$

Bayaran pampasan

Amount of compensation

$$= \frac{\text{RM}500\,000}{\text{RM}646\,000} \times \text{RM}180\,000 - \text{RM}4\,000$$

$$= \text{RM}139\,318.89 - \text{RM}4\,000$$

$$= \text{RM}135\,318.89$$

$\therefore$ Penalti ko-insurans

Co-insurance penalty

$$= \text{RM}180\,000 - \text{RM}139\,318.89$$

$$= \text{RM}40\,681.11$$

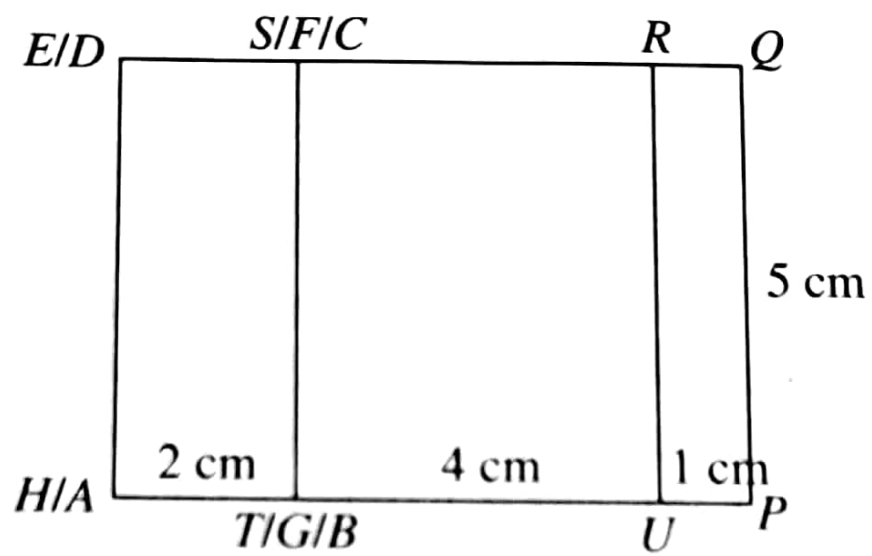
(b) Bayaran pampasan

Amount of compensation

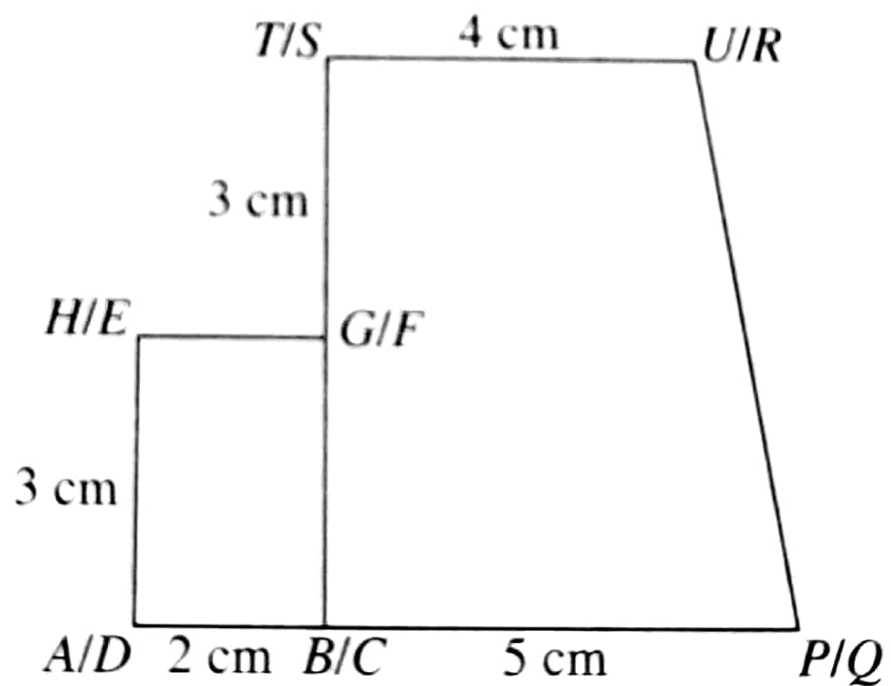
$$= \text{RM}620\,000 - \text{RM}4\,000$$

$$= \text{RM}616\,000$$

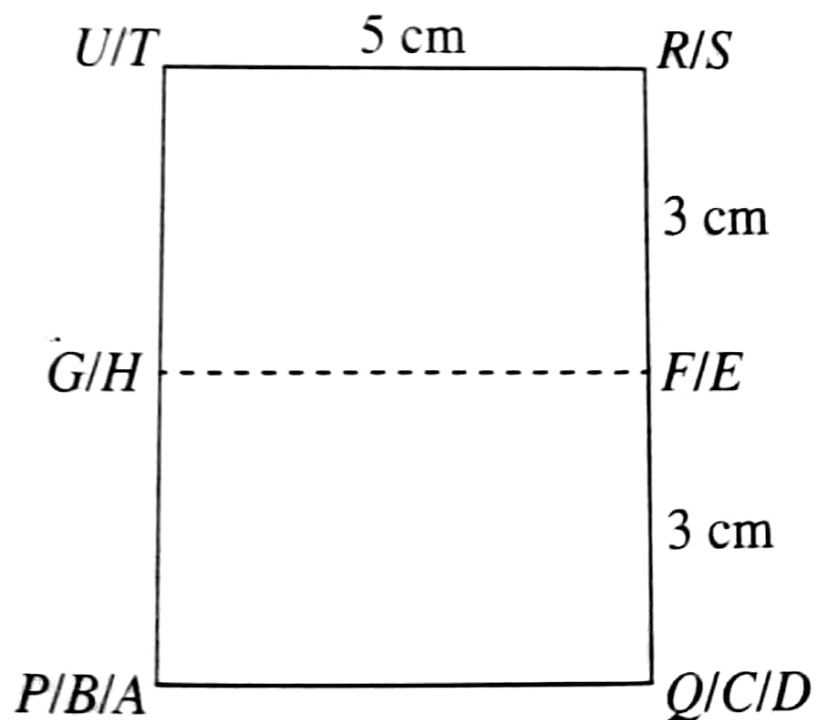
(a)



(b) (i)



(ii)



- (a) Katakan bilangan murid perempuan = x
dan bilangan murid lelaki = y .

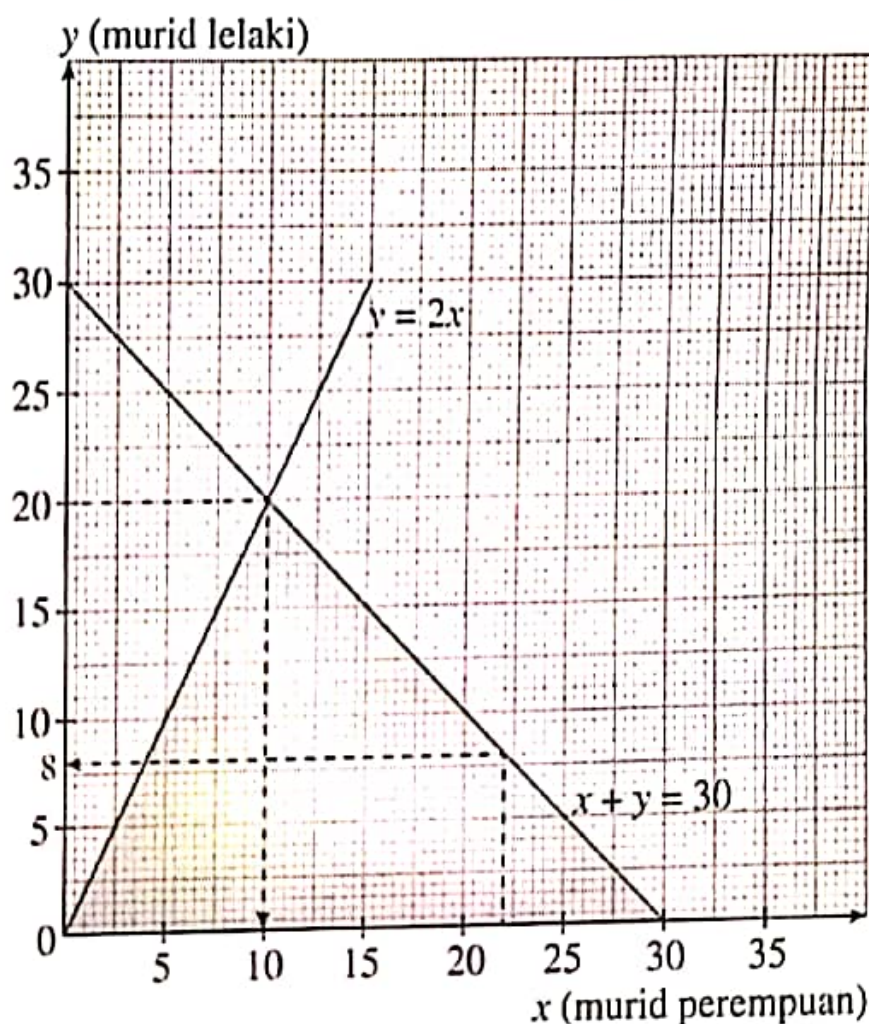
$$x + y \leq 30$$

$$y \leq 2x$$

(b)

$x + y = 30$		
x	0	30
y	30	0

$y = 2x$		
x	0	15
y	0	30



- (c) (i) Apabila bilangan maksimum murid lelaki,
 $y = 20$,
Bilangan murid perempuan, $x = 10$

- (ii) Apabila $x = 22$, $y = 8$.
Kos maksimum = $180x + 150y$
 $= 180(22) + 150(8)$
 $= \text{RM}5\ 160$

$$(a) \text{ Tempoh masa} = \text{Jam } 1000 - \text{Jam } 0915 \\ = 45 \text{ minit}$$

$$(b) \frac{\text{Laju akhir} - \text{Laju awal}}{\text{Tempoh masa}} = 336$$

$$\frac{u - 0}{0915 - 0900} = 336$$

$$\frac{u}{\frac{15}{60}} = 336$$

$$u = 84$$

$$(c) \text{ Katakan laju akhir} = v \text{ km j}^{-1}.$$

$$\text{Jumlah jarak yang dilalui} = 109.5$$

$$\text{Luas di bawah seluruh graf} = 109.5$$

$$\frac{1}{2} \left(1 + \frac{45}{60} \right) (84) + \frac{1}{2} (84 + v) \left(\frac{30}{60} \right) = 109.5$$

$$73.5 + \left(21 + \frac{1}{4} v \right) = 109.5$$

$$94.5 + \frac{1}{4} v = 109.5$$

$$\frac{1}{4} v = 15$$

$$v = 60$$

$$\therefore \text{Laju akhir} = 60 \text{ km j}^{-1}$$

$$(d) \text{ Kadar perubahan laju} = \frac{60 - 84}{\frac{30}{60}} = -48 \text{ km j}^{-2}$$

- (a) • Diketahui harga bagi 4 kg ayam ialah RM26.
We know that the cost of 4 kg of chicken is RM26.
- Tentukan jumlah bayaran yang perlu dibayar untuk 7 kg ayam
Determine the total amount that needs to be paid for 7 kg of chicken.

- (b) • Andaikan kadaran bagi jisim dan harga adalah tetap bagi ayam yang dijual dalam kedai itu.
Assume the proportion of mass and cost are fixed for the chicken sold in the store.

- Katakan x = jisim ayam dan y = jumlah bayaran.
Let x = mass of chicken and y = total amount of payment.

- y berubah secara langsung dengan x , maka $y = kx$ dengan k ialah pemalar.
 y varies directly as x , hence $y = kx$ where k is a constant.

- (c) Gantikan $x = 4$ dan $y = 26$ ke dalam $y = kx$:
Substitute $x = 4$ and $y = 26$ into $y = kx$:

$$26 = k(4)$$

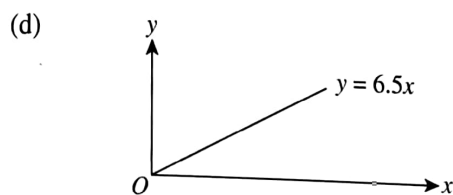
$$k = \frac{26}{4}$$

$$= 6.5$$

Maka/Thus, $y = 6.5x$

Apabila/When $x = 7$, $y = 6.5(7)$
 $= 45.5$

Jumlah amaun yang perlu dibayar ialah RM45.50.
The total amount of payment is RM45.50.



Model fungsi linear $y = 6.5x$ yang diperoleh adalah tidak sesuai digunakan untuk jangka masa panjang. Ini adalah kerana harga ayam adalah tertakluk kepada harga pasaran. Oleh itu, kadaran harga terhadap jisim ayam adalah sentiasa berubah. Maka, model baharu diperlukan apabila harga ayam berubah.

The linear function model $y = 6.5x$ obtained is not suitable to be used for long term. This because the cost of chicken is subject to the market price. Therefore, the proportion of cost to mass of chicken is always changing. Thus, a new model is needed when the cost of chicken changes.

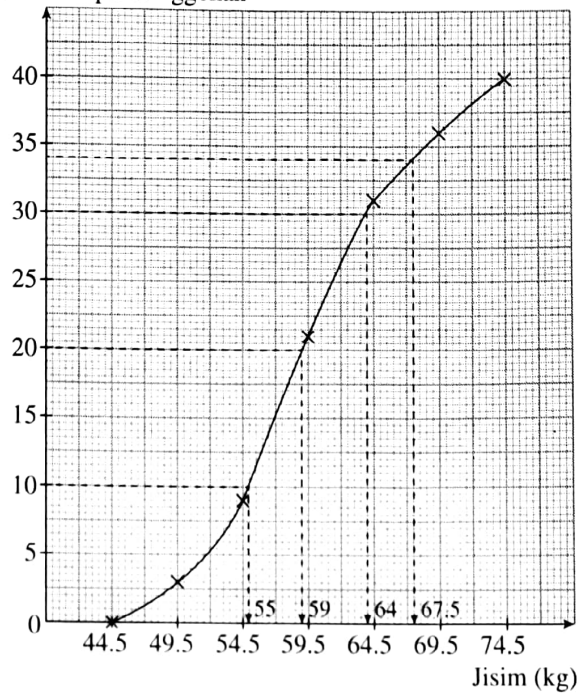
- (e) Dalam masalah ini, kita tidak dapat memurnikan model memandangkan harga pasaran ayam adalah sentiasa berubah. Laporkan dapatan dalam bentuk penyelesaian masalah berdasarkan tafsiran penyelesaian.

In this problem, we are not able to refine the model due to the market price of chicken is always changing. Report the findings of the problem solving based on interpretation of solutions.

(a) (i)

Jisim (kg)	Kekerapan	Sempadan atas	Kekerapan longgokan
40 – 44	0	44.5	0
45 – 49	3	49.5	3
50 – 54	6	54.5	9
55 – 59	12	59.5	21
60 – 64	10	64.5	31
65 – 69	5	69.5	36
70 – 74	4	74.5	40

(ii) Kekerapan longgokan



(iii) Daripada graf,

(a) Median = 59 kg

(b) Kuartil pertama = 55 kg

Kuartil ketiga = 64 kg

Julat antara kuartil = 64 – 55

= 9 kg

(c) Bagi persentil ke-85, $\frac{85}{100} \times 40 = 34$

Daripada graf,

persentil ke-85 = 67.5 kg

(b) Perimeter seluruh tapak = 400 m

$$100 + 100 + \left(2 \times \frac{22}{7} \times j\right) = 400$$

$$j = \frac{350}{11} \text{ m}$$

$$\text{Luas tapak} = (100) \left(2 \times \frac{350}{11}\right) + \frac{22}{7} \left(\frac{350}{11}\right)^2$$

$$= 9\,545.45 \text{ m}^2 \text{ atau setara}$$

(c) (i) Mod = 11.6 saat

$$(ii) \text{ Peratusan} = \frac{9}{20} \times 100\%$$

$$= 45\%$$

(a) (i) (a) **W**: Pembesaran pada pusat $E(4, 7)$ dengan

faktor skala $\frac{3}{2}$

Enlargement at centre $E(4, 7)$ with

a scale factor of $\frac{3}{2}$

(b) **V**: Putaran 90° ikut arah jam pada pusat $(-1, 8)$

Clockwise rotation of 90° about the centre $(-1, 8)$

(ii) Katakan luas $FGDE = A \text{ m}^2$.

$$\left(\frac{3}{2}\right)^2 \times A - A = 125$$

$$\frac{9}{4}A - A = 125$$

$$\frac{5}{4}A = 125$$

$$A = 100$$

$$\begin{aligned}\therefore \text{Luas } PQRS &= \text{Luas } ABCE \\ &= 100 + 125 \\ &= 225 \text{ m}^2\end{aligned}$$

(b) Katakan $\text{RM}x$ = harga tiket seorang dewasa,
 $\text{RM}y$ = harga tiket seorang kanak-kanak.

Persamaan linear serentak yang terbentuk:

$$2x + 4y = 132 \dots \textcircled{1}$$

$$3x + y = 108 \dots \textcircled{2}$$

$$\textcircled{2} \times 4: 12x + 4y = 432 \dots \textcircled{3}$$

$$\begin{aligned}\textcircled{3} - \textcircled{1}: \quad 10x &= 300 \\ x &= 30\end{aligned}$$

Gantikan $x = 30$ ke dalam $\textcircled{1}$:

$$2(30) + 4y = 132$$

$$4y = 72$$

$$y = 18$$

$\therefore$ Harga tiket seorang dewasa = RM30

Harga tiket seorang kanak-kanak = RM18

(c) (i) Apabila $x = 4$, $y = 2\,500$.

$$2\,500 = 4a + b \dots \textcircled{1}$$

Apabila $x = 7$, $y = 3\,700$.

$$3\,700 = 7a + b \dots \textcircled{2}$$

$$\textcircled{2} - \textcircled{1}: 1\,200 = 3a$$

$$a = 400$$

Gantikan $a = 400$ ke dalam $\textcircled{1}$:

$$2\,500 = 4(400) + b$$

$$b = 900$$

$\therefore$ Model matematik itu ialah $y = 400x + 900$.

(ii) Model matematik ini tidak sah untuk digunakan, sebab bilangan pengunjung pada setiap bulan adalah tidak tetap dan juga tidak mengikut fungsi linear itu.

This model is not valid to be used because the number of visitors in every month is not fixed and not following the linear function.