

Penyelesaian Lengkap

PRAKTIS 7

Kertas 1

1 Kedudukan/Position of $P_{75} = \frac{75}{100} \times 40$
 $= 30$
 $P_{75} = 62.5 \text{ kg}$

Jawapan/Answer: **B**

2 Julat/Range $= 95.5 - 45.5$
 $= 50$

Jawapan/Answer: **B**

3 $x = 9 - 3$
 $= 6$
 $y = 19 + 11$
 $= 30$
 $y - x = 30 - 6$
 $= 24$

Jawapan/Answer: **C**

4 $Q_3 - Q_1 = 60.3 - 38.8$
 $= 21.5$

Jawapan/Answer: **B**

5 75 orang murid mempunyai jisim kurang daripada 60.3 kg. Dengan itu, 25 orang murid berjisim lebih daripada 60.3 kg.
75 students weigh less than 60.3 kg. Therefore, 25 students weigh more than 60.3 kg

Peratusan/percentage = 25%

Jawapan/Answer: **A**

6 Varians/Variance
 $= \frac{(8 \times 2^2) + (12 \times 7^2) + (15 \times 12^2) + (10 \times 17^2) + (5 \times 22^2)}{50} - \left[\frac{(8 \times 2) + (12 \times 7) + (15 \times 12) + (10 \times 17) + (5 \times 22)}{50} \right]^2$
 $= \frac{8\,090}{50} - \left[\frac{560}{50} \right]^2$
 $= 36.36$

Jawapan/Answer: **C**

7 5A: Min/Mean $= \frac{1\,080}{32}$
 $= 33.75$

Sisihan piawai/Standard deviation

$$= \sqrt{\frac{38\,880}{32} - (33.75)^2}$$
$$= 8.7142$$

5B: Min/Mean $= \frac{1\,215}{36}$
 $= 33.75$

Sisihan piawai/Standard deviation

$$= \sqrt{\frac{42\,197}{36} - (33.75)^2}$$
$$= 5.7512$$

Jawapan/Answer: **D**

8 Kilang/Factory A: $(25.025 - 24.975) \times 100\,000 = 5\,000$

Kilang/Factory B: $(25.025 - 24.95) \times 100\,000 = 7\,500$

Beza julat antara kuartil/Difference between the interquartile range $= 7\,500 - 5\,000$
 $= 2\,500$

Jawapan/Answer: **C**

9 Sisihan piawai/Standard deviation

$$= \sqrt{\frac{(1 \times 14.5^2) + (3 \times 24.5^2) + (5 \times 34.5^2) + (2 \times 44.5^2) + (1 \times 54.5^2)}{1 + 3 + 5 + 2 + 1} - \left[\frac{(1 \times 14.5) + (3 \times 24.5) + (5 \times 34.5) + (2 \times 44.5) + (1 \times 54.5)}{1 + 3 + 5 + 2 + 1} \right]^2}$$

$$= \sqrt{\frac{14\,893}{12} - \left[\frac{404}{12} \right]^2}$$

$$= 10.37$$

Jawapan/Answer: A

Kertas 2

Bahagian A

- 1 (a) Saiz kelas/Size of class interval = $39.5 - 29.5 = 10$

- (b) Titik tengah/Midpoint =

Markah/Marks	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89
Titik Tengah Midpoint	34.5	44.5	54.5	64.5	74.5	84.5

- 2 (a) Syarikat/Company A = Bentuk seragam/Uniform-shaped
Syarikat/Company B = Bentuk loceng/Bell-shaped

- (b) Syarikat/Company A:

$$\begin{aligned} \text{Julat/Range} &= \text{RM} \left(\frac{91 + 100}{2} - \frac{61 + 70}{2} \right) \times 1\,000 \\ &= \text{RM}(95.5 - 65.5) \times 1\,000 \\ &= \text{RM}30\,000 \end{aligned}$$

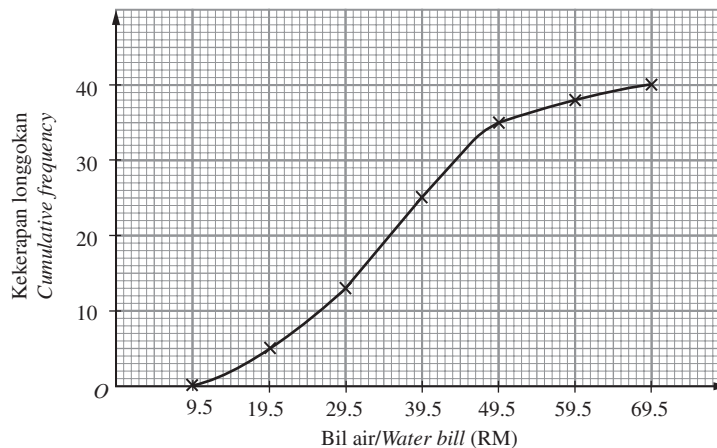
- Syarikat/Company B:

$$\begin{aligned} \text{Julat/Range} &= \text{RM} \left(\frac{91 + 100}{2} - \frac{41 + 50}{2} \right) \times 1\,000 \\ &= \text{RM}(95.5 - 45.5) \times 1\,000 \\ &= \text{RM}50\,000 \end{aligned}$$

Syarikat B mempunyai serakan gaji tahunan yang lebih luas. Nilai julat syarikat B lebih tinggi.

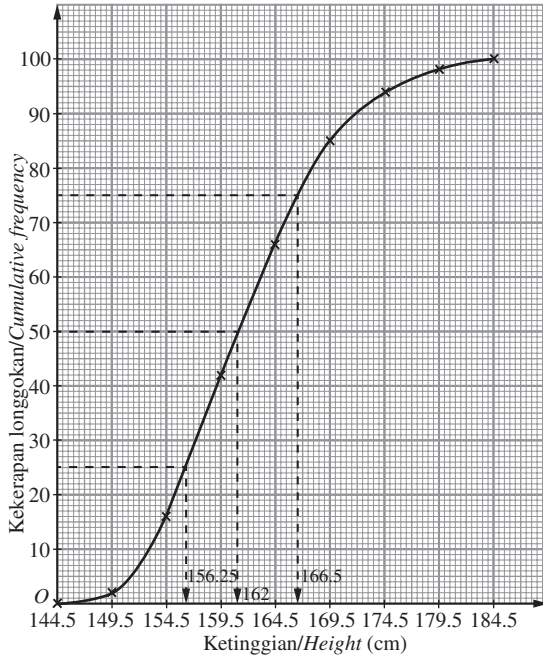
Company B has a wider dispersion of annual income. The value of range of company B is higher.

3 Bil air (RM) Water bill (RM)	0 – 9	10 – 19	20 – 29	30 – 39	40 – 49	50 – 59	60 – 69
Sempadan atas Upper boundary	9.5	19.5	29.5	39.5	49.5	59.5	69.5
Kekerapan Frequency	0	5	8	12	10	3	2
Kekerapan longgokan Cumulative frequency	0	5	13	25	35	38	40



4

Ketinggian Murid Lelaki
The Height of Boys



Kuartil pertama/*First quartile* = 156.25
 Median/*Median* = 162
 Kuartil ketiga/*Third quartile* = 166.5
 Julat antara kuartil/*Interquartile range* = 166.5 – 156.25
 = 10.25

6

Titik tengah/ <i>Midpoint</i>	Kekerapan/ <i>Frequency</i>
25.5	5
35.5	10
45.5	16
55.5	23
65.5	20
75.5	14
85.5	8
95.5	4

Min/*Mean*

$$= \frac{(5 \times 25.5) + (10 \times 35.5) + (16 \times 45.5) + (23 \times 55.5) + (20 \times 65.5) + (14 \times 75.5) + (8 \times 85.5) + (4 \times 95.5)}{100}$$

$$= \frac{5\,920}{100}$$

$$= 59.2\%$$

Sisihan piawai/*Standard deviation*

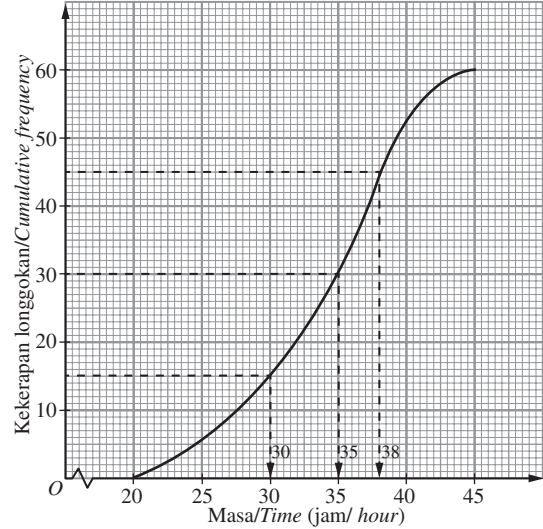
$$= \sqrt{\frac{(5 \times 25.5^2) + (10 \times 35.5^2) + (16 \times 45.5^2) + (23 \times 55.5^2) + (20 \times 65.5^2) + (14 \times 75.5^2) + (8 \times 85.5^2) + (4 \times 95.5^2)}{100} - [59.2]^2}$$

$$= \sqrt{\frac{380\,395}{100} - [59.2]^2}$$

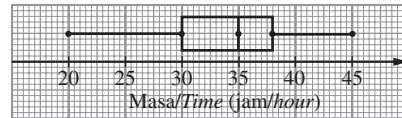
$$= 17.3$$

5

Jumlah Masa Melayari Internet dalam Seminggu
The Total Time Spent in Surfing Internet in a Week



(a) **Jumlah Masa Melayari Internet dalam Seminggu**
The Total Time Spent in Surfing Internet in a Week



(b) Bentuk taburan/*Distribution shape*
= Pencong ke kiri/*Skewed to the left*

Bahagian B

7 (a) Saiz selang kelas/Size of class interval = $\frac{40 - 17}{5}$
 $= 4.6 \approx 5$

Umur/Age (tahun/years)	Gundalan Tally	Titik Tengah Midpoint	Kekerapan Frequency
16 – 20	///	18	3
21 – 25	### ///	23	8
26 – 30	### ////	28	9
31 – 35	### /	33	6
36 – 40	////	38	4

(b) $\text{Min/Mean} = \frac{(3 \times 18) + (8 \times 23) + (9 \times 28) + (6 \times 33) + (4 \times 38)}{30}$
 $= \frac{840}{30}$
 $= 28$

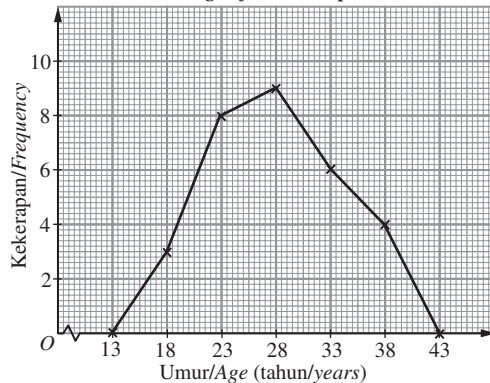
Sisihan piawai/Standard deviation

$$= \sqrt{\frac{(3 \times 18^2) + (8 \times 23^2) + (9 \times 28^2) + (6 \times 33^2) + (4 \times 38^2)}{30} - [28]^2}$$

$$= \sqrt{\frac{24\,570}{30} - [28]^2}$$

$$= 5.9161$$

(c) **Umur bagi 30 Orang Peserta**
The age of 30 Participants



8 (a) **Kelas/Class A:**

$$\text{Min/Mean} = \frac{(3 \times 45.5) + (8 \times 55.5) + (11 \times 65.5) + (6 \times 75.5) + (4 \times 85.5) + (3 \times 95.5)}{3 + 8 + 11 + 6 + 4 + 3}$$

$$= \frac{2\,382.5}{35}$$

$$= 68.07$$

Sisihan piawai/Standard deviation

$$= \sqrt{\frac{(3 \times 45.5^2) + (8 \times 55.5^2) + (11 \times 65.5^2) + (6 \times 75.5^2) + (4 \times 85.5^2) + (3 \times 95.5^2)}{35} - \left(\frac{2\,382.5}{35}\right)^2}$$

$$= \sqrt{\frac{168\,848.75}{35} - \left(\frac{2\,382.5}{35}\right)^2}$$

$$= 13.80$$

Kelas/Class B:

$$\text{Min/Mean} = \frac{(3 \times 45.5) + (8 \times 55.5) + (9 \times 65.5) + (8 \times 75.5) + (5 \times 85.5) + (2 \times 95.5)}{3 + 8 + 9 + 8 + 5 + 2}$$

$$= \frac{2\,392.5}{35}$$

$$= 68.36$$

Sisihan piawai/Standard deviation

$$= \sqrt{\frac{(3 \times 45.5^2) + (8 \times 55.5^2) + (9 \times 65.5^2) + (8 \times 75.5^2) + (5 \times 85.5^2) + (2 \times 95.5^2)}{35} - \left[\frac{2\,392.5}{35} \right]^2}$$

$$= \sqrt{\frac{169\,858.75}{35} - \left[\frac{2\,392.5}{35} \right]^2}$$

$$= 13.43$$

(b) Kelas B menunjukkan keputusan yang lebih konsisten. Sisihan piawai kelas B adalah lebih kecil daripada kelas A.
Class B shows a more consistent result. The standard deviation of class B is smaller than that of class A.

9 (a) Restoran/Restaurant A

(i) Kuartil pertama/First quartile = RM23 000

(ii) Median/Median = RM31 000

(iii) Kuartil ketiga/Third quartile = RM42 000

Restoran/Restaurant B

(i) Kuartil pertama/First quartile = RM31 000

(ii) Median/Median = RM41 000

(iii) Kuartil ketiga/Third quartile = RM48 000

(b) Restoran/Restaurant A

Julat antara kuartil/Interquartile range = RM(42 000 – 23 000)
 = RM19 000

Restoran/Restaurant B

Julat antara kuartil/Interquartile range = RM(48 000 – 31 000)
 = RM17 000

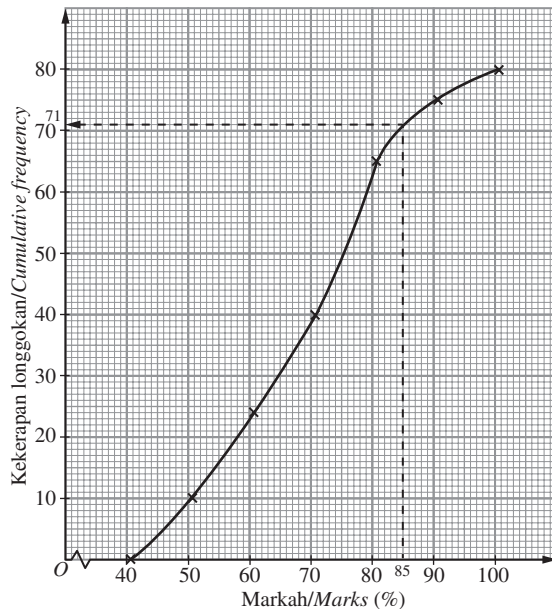
(c) Restoran B mencatatkan keuntungan yang lebih tinggi. Nilai kuartil pertama, median dan kuartil ketiga bagi restoran B lebih tinggi daripada nilai kuartil pertama, median dan kuartil ketiga bagi restoran A.

Restaurant B is making more profit. The values of the first quartile, median, third quartile of restaurant B is higher than that of restaurant A.

10 (a)

Markah Marks	Kekerapan Frequency	Sempadan Atas Upper Boundary	Kekerapan Longgokan Cumulative Frequency
41 – 50	10	50.5	10
51 – 60	14	60.5	24
61 – 70	16	70.5	40
71 – 80	25	80.5	65
81 – 90	10	90.5	75
91 – 100	5	100.5	80

(b) **Markah dalam Ujian Matematik**
Marks in Mathematics Test



- (c) Bilangan murid yang memperoleh 85% ke atas
The number of students who obtained 85% and above
 $= 80 - 71$
 $= 9$

$$\begin{aligned} \text{Peratusan/Percentage} &= \frac{9}{80} \times 100\% \\ &= 11.25\% \end{aligned}$$

Bahagian C

11 (a) Saiz selang kelas/Size of class interval $= \frac{48 - 18}{7}$
 $= 4.3 \approx 5$

Perbelanjaan Expenses (RM)	Gundalan Tally	Titik Tengah Midpoint	Kekerapan Frequency	Sempadan Atas Upper Boundary	Kekerapan Longgokan Cumulative Frequency
16 – 20	///	18	3	20.5	3
21 – 25	### ///	23	8	25.5	11
26 – 30	###	28	5	30.5	16
31 – 35	### ////	33	9	35.5	25
36 – 40	### //	38	7	40.5	32
41 – 45	###	43	5	45.5	37
46 – 50	///	48	3	50.5	40

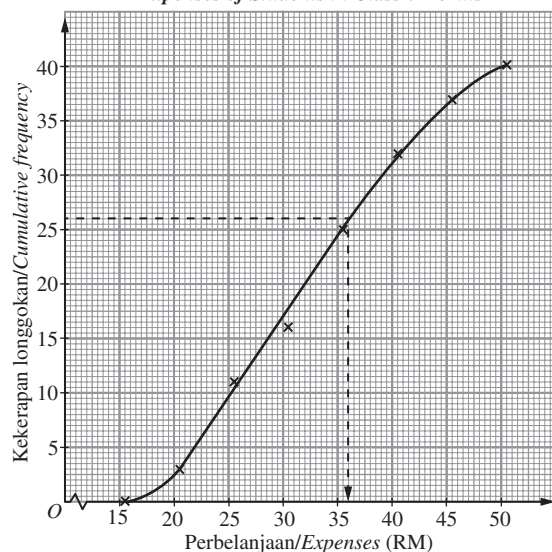
(b) $\text{Min/Mean} = \frac{(3 \times 18) + (8 \times 23) + (5 \times 28) + (9 \times 33) + (7 \times 38) + (5 \times 43) + (3 \times 48)}{3 + 8 + 5 + 9 + 7 + 5 + 3}$
 $= \frac{1\,300}{40}$
 $= 32.5$

Varians/Variance

$$\begin{aligned} &= \frac{(3 \times 18^2) + (8 \times 23^2) + (5 \times 28^2) + (9 \times 33^2) + (7 \times 38^2) + (5 \times 43^2) + (3 \times 48^2)}{40} - [32.5]^2 \\ &= \frac{45\,190}{40} - [32.5]^2 \\ &= 73.5 \end{aligned}$$

Sisihan piawai/Standard deviation $= \sqrt{73.5}$
 $= 8.573$

- (c) **Perbelanjaan Murid Kelas 5 Doritis**
Expenses of Students in Class 5 Doritis



Kedudukan/Position, $P_{65} = \frac{65}{100} \times 40$
 $= 26$
 $P_{65} = 36$