



1. (a) ✓
(b) ✗
(c) ✗
(d) ✓

2. (a) Tinjauan
Survey
(b) Eksperimen
Experiment
(c) Pemerhatian
Observation
(d) Temu bual
Interview

3. (a) Data numerik
Numerical data
(b) Data kategori
Categorical data
(c) Data numerik
Numerical data
(d) Data kategori
Categorical data

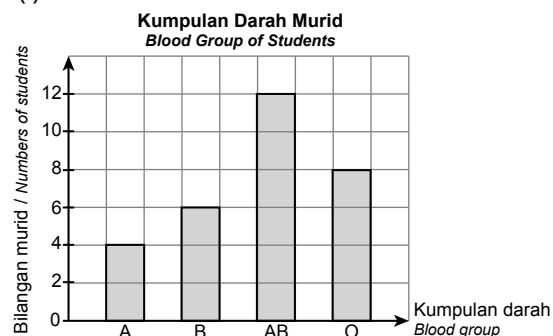
4. (a)

Saiz kasut Size of shoes	Gundalan Tally	Kekerapan Frequency
3		2
4		5
5		5
6		7
7		1
Jumlah Total		20

(b)

Gred Grade	Gundalan Tally	Kekerapan Frequency
A		7
B		10
C		6
D		7
Jumlah / Total		30

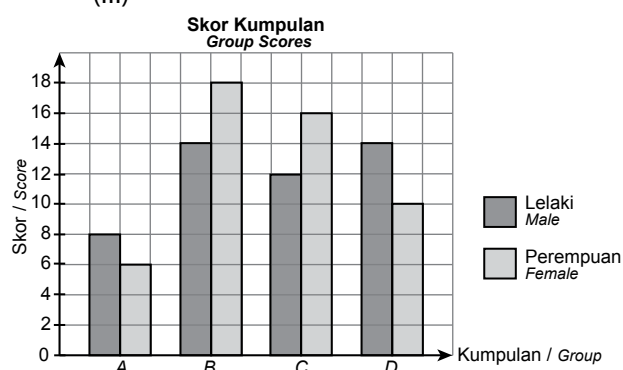
5. (a) (i)



- (ii)

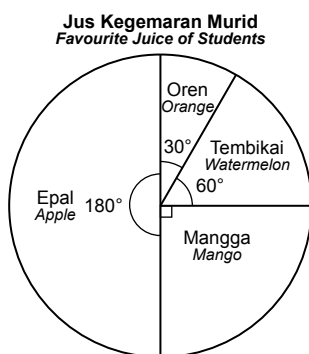


- (iii)

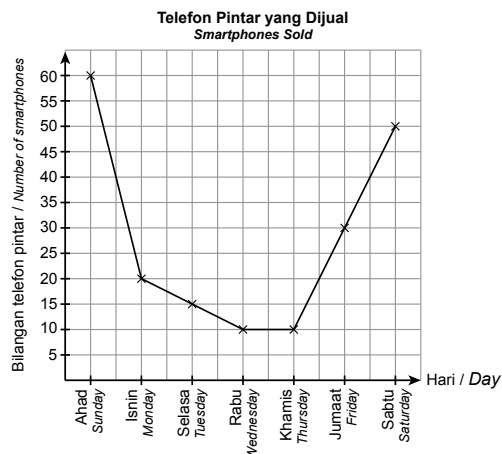


(b)

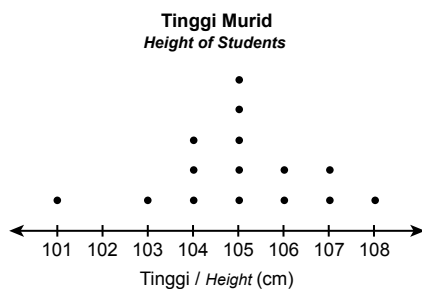
Jus Juice	Bilangan murid Number of students	Sudut sektor Angle of sector
Tembikai Watermelon	100	$\frac{100}{600} \times 360^\circ = 60^\circ$
Oren Orange	50	$\frac{50}{600} \times 360^\circ = 30^\circ$
Epal Apple	300	$\frac{300}{600} \times 360^\circ = 180^\circ$
Mangga Mango	150	$\frac{150}{600} \times 360^\circ = 90^\circ$
Jumlah Total	600	360°



(c)



(d)



(e)

Masa untuk Melukis Poster
Time Taken to Draw Poster

Batang Stem	Daun Leaf		Batang Stem	Daun Leaf
1	1 4 7 2	➔	1	1 2 4 7
2	7 4 2 8 6		2	2 4 6 7 8
3	0 1 5 0		3	0 0 1 5
4	5 0		4	0 5

Kekunci: 1 | 1 bermakna 11 minit
Key: 1 | 1 means 11 minutes

6. (a)

Batang Stem	Daun Leaf
8	7 7 8 8 9 9 9
9	2 2 3 4 5 6 7 7 7 8 8 8 9 9 9
10	0 0 0 0 0 1

Kekunci: 8 | 9 bermakna 89 batang pen
Key: 8 | 9 means 89 pens

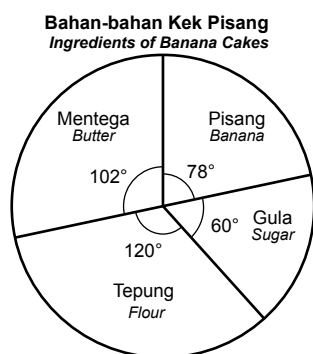
Plot batang-dan-daun sesuai untuk memaparkan taburan pen yang dijual dengan mengekalkan nilai data asal.

Stem-and-leaf plot is suitable for displaying the distribution of the pens sold by retaining the original data values.



(b)

Bahan Ingredient	Jisim (g) Mass	Sudut sektor Angle of sector
Pisang / <i>Banana</i>	130	$\frac{130}{600} \times 360^\circ = 78^\circ$
Gula / <i>Sugar</i>	100	$\frac{100}{600} \times 360^\circ = 60^\circ$
Tepung / <i>Flour</i>	200	$\frac{200}{600} \times 360^\circ = 120^\circ$
Mentega / <i>Butter</i>	170	$\frac{170}{600} \times 360^\circ = 102^\circ$
Jumlah / Total	600	360°



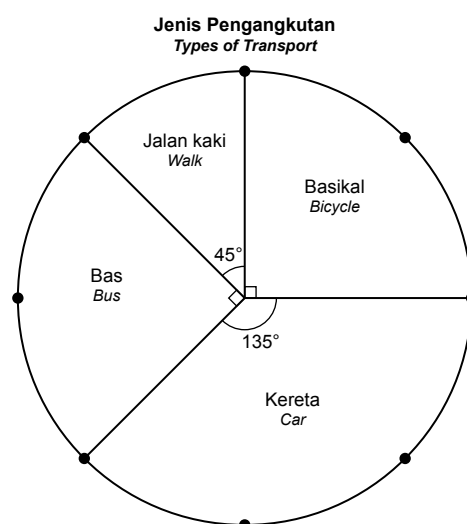
Carta pai sesuai untuk memaparkan komposisi bahan-bahan membuat kek pisang.

Pie chart is suitable for displaying the composition of the ingredients of banana cakes.

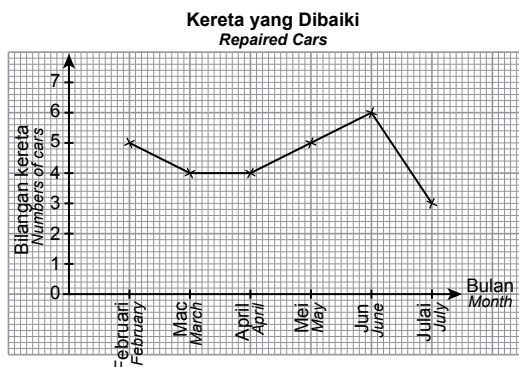
7. (a) (i) 8 orang murid / *students*
(ii) $10 : 2 = 5 : 1$

(b)

Jenis pengangkutan Types of transport	Bilangan murid Number of students	Sudut sektor Angle of sector
Basikal <i>Bicycle</i>	80	$\frac{80}{320} \times 360^\circ = 90^\circ$
Kereta <i>Car</i>	120	$\frac{120}{320} \times 360^\circ = 135^\circ$
Bas <i>Bus</i>	80	$\frac{80}{320} \times 360^\circ = 90^\circ$
Jalan kaki <i>Walk</i>	40	$\frac{40}{320} \times 360^\circ = 45^\circ$
Jumlah Total	320	360°



(c)



(i) Jumlah bilangan kereta dibaiki

Total number of cars repaired

$$= 5 + 4 + 4 + 5 + 6$$

$$= 24$$

Min bilangan kereta

Mean of the number of cars

$$= \frac{24}{5}$$

$$= 4.8$$

(ii) Bilangan kereta yang dibaiki pada bulan Februari adalah sama dengan bilangan kereta yang dibaiki pada bulan Mei. Begitu juga bilangan kereta yang dibaiki pada bulan Mac dan April adalah sama.

The number of cars repaired in February is the same as the number of cars repaired in May. The numbers of cars repaired in March and April are also the same.

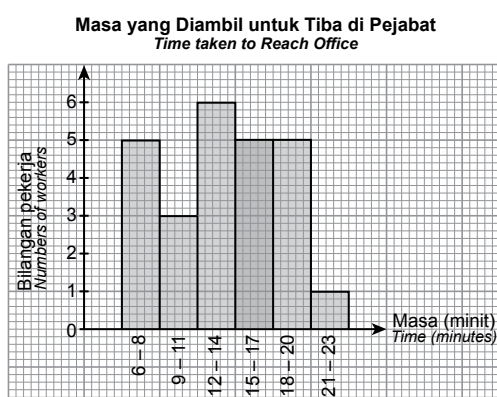
(iii) Bilangan kereta yang dibaiki pada bulan Julai

Number of cars repaired in July

$$= \frac{50}{100} \times 6$$

$$= 3$$

(d)



(i) Bilangan pekerja bagi selang masa

15 – 17 minit

Number of workers for the time interval 15 – 17 minutes

$$= 25 - 5 - 3 - 6 - 5 - 1$$

$$= 5$$

(ii) 21 – 23 minit / minutes

$$(iii) \frac{5 + 3 + 6}{25} \times 100 = 56\%$$

(e) (i) Jumlah bilangan mangga

Total number of mangoes

$$= 13 + 20 + 17 + 10$$

$$= 60$$

(ii) Bilangan mangga yang mempunyai jisim 500 g hingga 799 g

Number of mangoes that have the masses from 500 g to 799 g

$$= 13 + 20$$

$$= 33$$

Peratusan / Percentage

$$= \frac{33}{60} \times 100$$

$$= 55\%$$

Maka, kelompok pertama akan dihantar ke kilang pemprosesan jus mangga.

Hence, the first batch will be sent to mango juice processing factory.

(iii) Kebanyakan mangga mempunyai jisim 600 g hingga 899 g.

Most of the mangoes have the masses from 600 g to 899 g.

8. Tidak kerana skala pada paksi mencancang tidak seragam dan data yang dipaparkan adalah tidak tepat bagi tahun 2017. Hal ini penting supaya maklumat yang dipaparkan tidak mengelirukan.

No because the scale on the vertical axis is not consistent and the data displayed is not accurate for the year 2017. This is important so that the information displayed is not confusing.

9. Aktiviti PAK-21

10. Projek STEM

Praktis Masteri 12

BAHAGIAN >>A

1. Jawapan / Answer: **D**

2. Jawapan / Answer: **B**

3. Bilangan buku yang dijual pada bulan Januari

The number of books sold in January

$$= 70$$

Bilangan buku yang dijual pada bulan Februari

The number of books sold in February

$$= 40$$

Bilangan buku yang dijual pada bulan Januari dan Februari

The number of books sold in January and February

$$= 70 + 40$$

$$= 110$$

Bilangan buku yang dijual pada bulan Mac
The number of books sold in March

$$= \frac{2}{3} \times 110$$

$$= 66$$

Jawapan / Answer: **B**

4. $90^\circ = 25\%$

Peratus bagi mewakili warna kuning

The percentage for represents yellow colour

$$= 100\% - 20\% - 10\% - 25\%$$

$$= 45\%$$

$$45\% = \frac{45}{100}$$

$$= \frac{9}{20}$$

Jawapan / Answer: **C**

5. Peratus bilangan rumah yang dikenakan caj bil air kurang daripada RM50

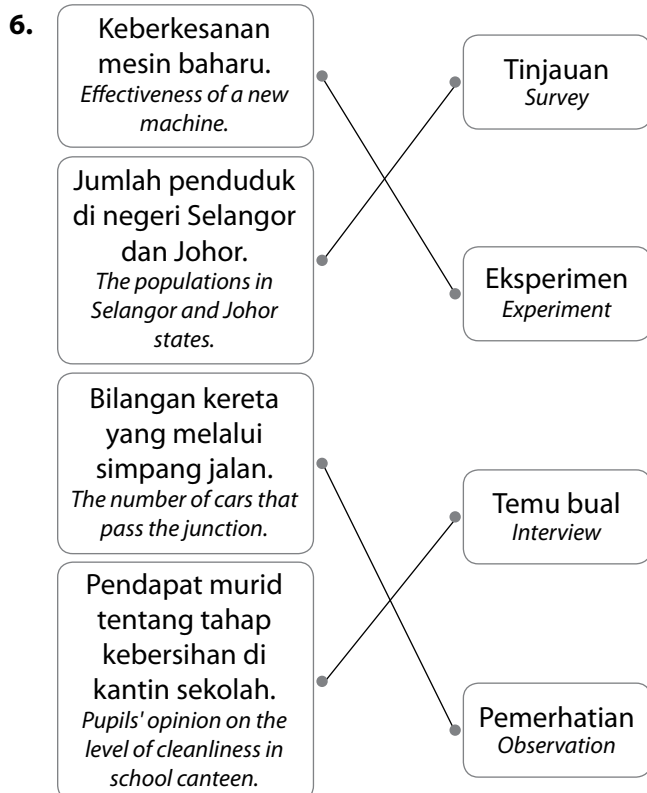
The percentage of the number of houses that has water bill charge less than RM50.

$$= \frac{18}{24} \times 100\%$$

$$= 75\%$$

Jawapan / Answer: **C**

BAHAGIAN B



7. (a) Data kategori
Categorical data
(b) Data numerik
Numerical data

(c) Data numerik
Numerical data

(d) Data numerik
Numerical data

8.

Bilangan gol Number of goals	Gundalan Tally	Kekerapan Frequency
0		3
1		4
2		2
3		5

BAHAGIAN C

9. (a) (i)

Skor Score	Gundalan Tally	Kekerapan Frequency
0		2
1		3
2		5
3		7
4		10
5		3
Jumlah / Total		30

(ii) $\frac{10}{30} \times 360^\circ = 120^\circ$

- (b) (i) 5 unit / units $\rightarrow$ 10
1 unit $\rightarrow$ 2

Bilangan pingat emas

Number of gold medals

$$= 7 \times 2$$

$$= 14$$

Jumlah bilangan murid

Total number of pupils

$$= 20 \times 2$$

$$= 40$$

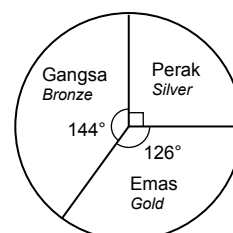
Peratusan pingat emas

Percentage of gold medals

$$= \frac{14}{40} \times 100\%$$

$$= 35\%$$

(ii)



- (c) Pecahan yang mewakili bilangan murid yang menaiki kereta

The fraction that represents the number of pupils who take the car

$$= 1 - \frac{1}{6} - \frac{1}{4} - \frac{1}{4}$$

$$= \frac{1}{3}$$

$$\frac{1}{6} \rightarrow 30$$

$$\frac{1}{3} \rightarrow ?$$

Bilangan murid yang menaiki kereta

Number of pupils who take the car

$$= \frac{6}{3} \times 30$$

$$= 60$$

10. (a) (i) 78 kg

- (ii) 11

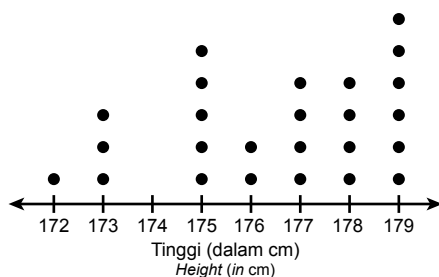
- (iii) Peratusan murid yang mempunyai jisim selebih-lebihnya 49 kg

The percentage of pupils whose mass is at most 49 kg

$$= \frac{9}{20} \times 100\%$$

$$= 45\%$$

(b)



- (c) (i) Jumlah keuntungan

Total profit

$$= 40\,000 + 45\,000 + 42\,500 + 47\,500$$

$$+ 55\,000$$

$$= \text{RM}230\,000$$

- (ii) Keuntungan syarikat semakin bertambah pada setiap tahun selepas 2020.

The profit of the company is increasing each year after 2020.

Fokus KBAT

Bilangan murid yang suka membaca

The number of students who like to read

$$y = \frac{2}{9}(y + 25 + x + 35)$$

$$9y = 2(y + x + 60) \dots\dots\dots \textcircled{1}$$

Bilangan murid yang suka berenang

The number of students who like to swim

$$x = \frac{1}{2}y \dots\dots\dots \textcircled{2}$$

Daripada / From $\textcircled{2}$:

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

Gantikan $\textcircled{3}$ ke dalam $\textcircled{1}$

Substitute $\textcircled{3}$ into $\textcircled{1}$:

$$9(2x) = 2(2x + x + 60)$$

$$18x = 6x + 120$$

$$12x = 120$$

$$x = 10$$

Gantikan $x = 10$ ke dalam $\textcircled{3}$:

Substitute $x = 10$ into $\textcircled{3}$:

$$y = 2(10)$$

$$= 20$$

Hobi Hobby	Bilangan murid Number of students	Sudut sektor Angle of sector
Membaca Reading	20	$\frac{20}{90} \times 360 = 80^\circ$
Berbasikal Cycling	25	$\frac{25}{90} \times 360 = 100^\circ$
Berenang Swimming	10	$\frac{10}{90} \times 360 = 40^\circ$
Menonton televisyen Watching television	35	$\frac{35}{90} \times 360 = 140^\circ$
Jumlah Total	90	360°

