

Lesson Worksheet 6.2A(I)

Objectives: To calculate mean from a set of grouped data.

The mean of a set of grouped data is calculated as follows:

(a) Discrete data not grouped into intervals 不以區間分組的離散數據

Consider the following set of data: 考慮以下的數據組：

Number of people	1	2	3
Frequency	10	6	4

$$\text{Mean} = \frac{1 \times 10 + 2 \times 6 + 3 \times 4}{10 + 6 + 4} \leftarrow \begin{array}{l} \text{sum of 'data} \times \text{frequency' 「數據} \times \text{頻數」的總和} \\ \text{sum of frequencies 頻數的總和} \end{array}$$

$$= \underline{1.7}$$

(b) Data grouped into intervals 以區間分組的數據

Consider the following set of data: 考慮以下的數據組：

Weight (kg)	40 – 42	43 – 45	46 – 48
Frequency	9	8	3

↓ ↓ ↓ ← Class marks of the intervals 組區間的組中點

$$\text{Mean} = \frac{41 \times 9 + 44 \times 8 + 47 \times 3}{9 + 8 + 3} \text{ kg} \leftarrow \begin{array}{l} \text{sum of frequencies 頻數的總和} \end{array}$$

$$= \underline{43.1 \text{ kg}}$$

1. The following table shows the time (in min) spent waiting for a bus by some passengers.

Time spent (min)	1	2	3	4	5	6
Number of passengers	2	4	2	5	6	11

Find the mean waiting time.

Mean waiting time

$$= \frac{[1 \times (2) + 2 \times (4) + 3 \times (2) + 4 \times (5) + 5 \times (6) + 6 \times (11)]}{[(2) + (4) + (2) + (5) + (6) + (11)]} \text{ min}$$

$$= \underline{4.4} \text{ min}$$

2. The following table shows the number of mobile phones owned by a group of people.

Number of mobile phones	0	1	2	3	4
Number of people	2	12	18	10	3

Find the mean number of mobile phones owned.

Mean number of mobile phones

$$= \frac{[0 \times (2) + 1 \times (12) + 2 \times (18) + 3 \times (10) + 4 \times (3)]}{[(2) + (12) + (18) + (10) + (3)]}$$

$$= \underline{2}$$

mean (平均值)

median (中位數)

mode (眾數)

3. The table below shows the daily number of cakes sold in a bakery in a month.

Number of cakes sold	8	9	10	11	12	13
Frequency	1	4	9	6	9	1

Find the mean daily number of cakes sold.

Mean daily number of cakes sold

$$= \frac{[8 \times 1 + (9) \times (4) + (10) \times (9) + (11) \times (6) + (12) \times (9) + (13) \times (1)]}{[1 + (4) + (9) + (6) + (9) + (1)]}$$

$$= \underline{\underline{10.7}}$$

4. The following table shows the number of watches owned by a group of people.

Number of watches	14	15	16	17	18	19	20
Number of people	10	6	3	7	3	3	1

Find the mean number of watches owned by this group of people.

Mean number of watches =

$$\frac{[14 \times 10 + (15) \times (6) + (16) \times (3) + (17) \times (7) + (18) \times (3) + (19) \times (3) + (20) \times (1)]}{[10 + (6) + (3) + (7) + (3) + (3) + (1)]}$$

$$= \underline{\underline{16}}$$

Challenging Question(Optional)

- *5. The following table shows the scores of students of class 3C in a quiz.

Score (marks)	5	6	7	8	9	10
Number of students	4	8	n	5	4	2

If the mean score of class 3C is 7.1 marks, find n .

$$\frac{[(5) \times (4) + (6) \times (8) + 7 \times n + (8) \times (5) + (9) \times (4) + (10) \times (2)]}{[(4) + (8) + n + (5) + (4) + (2)]} = (7.1)$$

$$\frac{7n + 164}{n + 23} = 7.1$$

$$7n + 164 = 7.1n + 163.3$$

$$0.1n = 0.7$$

$$n = \underline{\underline{7}}$$