



# Mean

The **mean** is the average of all the scores.

1. The mean of a **small data set**

$$\text{Mean} = \frac{\text{sum of all the scores}}{\text{number of scores}}$$

eg For the scores 1, 2, 3, 4, 5, 5, 6, 9, 10

$$\text{Mean} = \frac{1+2+3+4+5+5+6+9+10}{9} = \frac{45}{9} = 5$$

2. The **mean** from a **frequency distribution table**

If the data is in a frequency distribution table, an extra column called  $fx$  may be added. The numbers in the  $fx$  column are obtained by multiplying the score ( $x$ ) by the frequency ( $f$ ).

$$\text{Mean} = \frac{\text{the total of the } fx \text{ column}}{\text{the total of the } f \text{ column}}$$

Score ( $x$ )	Tally	Frequency ( $f$ )	$fx$
11	I	6	66
12		5	60
13		14	182
14	I	6	84
15	II	7	105
16		2	32
		40	529

$$\begin{aligned} fx &= \text{score} \times \text{frequency} \\ &= 11 \times 6 = 66 \end{aligned}$$

$$\text{Mean} = \frac{\text{the total of the } fx \text{ column}}{\text{the total of the } f \text{ column}} = \frac{529}{40} = 13.225$$

3. The **mean** from a **grouped frequency distribution table**

When the data is in a grouped frequency distribution table, the class centre is used instead of the score when calculating the  $fx$  column.

$$\text{Mean} = \frac{\text{the total of the } fx \text{ column}}{\text{the total of the } f \text{ column}}$$

Class	Class Centre ( $x$ )	Tally	Frequency ( $f$ )	$fx$
1 – 10	5.5	I	6	33
11 – 20	15.5		5	77.5
21 – 30	25.5		14	357
31 – 40	35.5	I	6	213
41 – 50	45.5	II	7	318.5
51 – 60	55.5		2	111
			40	1110

$$\text{Mean} = \frac{\text{the total of the } fx \text{ column}}{\text{the total of the } f \text{ column}} = \frac{1110}{40} = 27.75$$