

Mean from Frequency Tables

Here is a table showing the number of goals a footballer scored in games. Find the mean goals scored per game.

Goals	Frequency	
0	13	$0 \times 13 = 0$
1	8	$1 \times 8 = 8$
2	3	$2 \times 3 = 6$
3	2	$3 \times 2 = 6$
4	1	$4 \times 1 = 4$

when calculating the mean from a table we have to be careful

There are 27 pieces of data
($13 + 8 + 3 + 2 + 1$)

To add them we have to multiply across then add down

In total 24 goals were scored ($0 + 8 + 6 + 6 + 4$)

$$24 \div 27 = 0.89 \text{ goals per game (2dp)}$$

Here is a table showing the times taken in minutes for 30 students to complete a maths test.

Find an estimate for the mean time.

Time (t)	Frequency	
$0 < t \leq 10$	1	$5 \times 1 = 5$
$10 < t \leq 20$	3	$15 \times 3 = 45$
$20 < t \leq 30$	7	$25 \times 7 = 175$
$30 < t \leq 40$	8	$35 \times 8 = 280$
$40 < t \leq 50$	11	$45 \times 11 = 495$

It is an **estimate** for the mean because we do not know the exact times.

We use the mid-points in place of the exact times.

To add them we have to multiply across then add down

The total time taken was 1000 minutes
($5 + 45 + 175 + 280 + 495$)

$$1000 \div 30 = 33.33 \text{ minutes (2dp)}$$