# Guide to:
# Averages from tables

maths Links

**Explanation:**

For an **ungrouped frequency table**, find the mean by multiplying each value ***x*** by its frequency ***f***, then divide the total of the ***fx*** column by the **total frequency Σ*f*** (never divide by the number of rows!).

For a **grouped frequency table** (with intervals like $0 < t \leq 10$), you do not know the exact values, so find the **midpoint** of each interval first and calculate **Estimated Mean =** $\frac{\Sigma(f \times \text{midpoint})}{\Sigma f}$. The **modal class** is the interval with the highest frequency.

**Example 1:** Find the mean number of goals per match for 20 matches.

| Goals (*x*) | 0 | 1 | 2 | 3 | Total |
|---|---|---|---|---|---|
| Freq (*f*) | 4 | 7 | 6 | 3 | **20** |
| *f* × *x* | 0 | 7 | 12 | 9 | **28** |

Mean = $\frac{\Sigma fx}{\Sigma f} = \frac{28}{20}$ = **1.4 goals**

**Example 2:** Estimate the mean time from the grouped table.

| Time *t* | $0<t\leq10$ | $10<t\leq20$ | $20<t\leq30$ | Total |
|---|---|---|---|---|
| Freq (*f*) | 6 | 10 | 4 | **20** |
| Midpoint | 5 | 15 | 25 | — |
| *f* × Mid | 30 | 150 | 100 | **280** |

Estimated Mean = $\frac{280}{20}$ = **14 mins** (Modal class: **$10 < t \leq 20$**)

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