

Big tournament statistics for IGCSE and GCSE

IGCSE Math Revision · IGCSE and GCSE (Higher and Extended) · Student sheet

Name _____

Class _____

Date _____

The starter is non-calculator. A calculator is allowed in the main activity.

Starter (5 minutes)

1. Find the mean of 2, 4, 4, 5, 10.
2. Find the median of 3, 8, 1, 9, 4, 7.
3. Find the range of 12, 15, 9, 20, 17, 11, 14, 22, 8, 18.
4. Find the mode of 2, 3, 3, 5, 7, 3.

Main activity (35 minutes)

Task A: Goals per match

Made-up goals in 40 matches: 0 goals in 4 matches, 1 in 9, 2 in 11, 3 in 8, 4 in 5, 5 in 2 and 6 in 1.

- a. Check that there are 40 matches, and find the total number of goals.
- b. Find the mean number of goals per match.
- c. Find the median and the mode.

Task B: Shots and goals

Made-up data for ten teams. Shots on target: 12, 15, 9, 20, 17, 11, 14, 22, 8, 18. Goals: 4, 5, 2, 8, 6, 3, 5, 9, 2, 6 (in the same order).

- a. Plot a scatter graph. Find the mean number of shots and the mean number of goals.
- b. A line of best fit passes through the mean point (14.6, 5) and the point (8, 2). Find its gradient, to 3 significant figures.
- c. Use the line to estimate the goals for a team with 16 shots on target, to 1 decimal place.

Task C: Chance

Use the goals table from task A.

- a. Find the relative frequency of a match with 3 or more goals.
- b. The next stage has 64 matches. How many would you expect to have 3 or more goals?
- c. Using relative frequency, estimate the probability that two matches, independently, both have no goals.

Extension

1. After 8 more matches, the mean number of goals over all 48 matches is 2.5. How many goals were scored in the 8 new matches?
2. Find the mean number of goals in those 8 new matches, as a decimal.