

GCSE Maths – Statistics

Populations

Worksheet

NOTES



SOLUTIONS



This worksheet will show you how to work out different types of questions relating to populations. Each section contains a **worked example**, a **question with hints** and then **questions for you to work through** on your own.

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Section A

Worked Example

500 members of a sports club took part in a study. Information about the members is shown in the table. Describe the population. [4 marks]

	% of Population	Mean Age	Range of Ages
Men	73	43.8	58
Women	27	57.3	24

Step 1: The question is worth 4 marks, so you should make 4 separate points about the population of the sports club.

These should be written in 4 different sentences to make your points clear.

Step 2: Work out the number of men and women who are members of the club.

$$\begin{aligned}73\% \text{ of } 500 &= 0.73 \times 500 = 365 \text{ men} \\27\% \text{ of } 500 &= 0.27 \times 500 = 135 \text{ women}\end{aligned}$$

Step 3: Deduce two other points about the population.

One point should focus on each of the other columns (mean and range) that describe the population.

Step 4: Form four full sentences using this information.

*There are 365 male members of the club.
There are 135 female members of the club.
The female members have a higher mean age than the male members, so are older on average.
The male members have a greater range of ages than the female members.*

Guided Example

1000 people at a concert take part in a survey. Of those at the concert, 64% are under-18. The rest range in ages up to aged 45. Describe the population. [2 marks]

Step 1: Look at how many marks the question is worth to deduce how many points you need to make.

Step 2: Work out the distinct groups of people at the concert.

Step 3: Form full sentences using this information.



Now it's your turn!

If you get stuck, look back at the worked and guided examples.

1. The following data was taken from a large sample of students at a school. Make three observations about the population.

	% of Sample	Mean Math Score	Range of Math Scores
Male	54	62.1	23.2
Female	46	57.3	29.6

2. Members of a music club took part in a survey. Make two observations about the population.

	% of Sample	Mean Music Grade	Range of Music Grades
Male	32	3.4	2.2
Female	68	6.8	5.1



3. 5000 people attended a football match. A sample of 50 people took part in a survey after the game. Some information about their answers is shown below.

	No. in Sample	Correctly Predicted Score	Supported the Home Team
Male	38	7	32
Female	12	9	5

- a) What is the population?
- b) What percentage of the sample is male?
- c) Estimate the number of men in the population.
- d) Estimate the percentage of women in the population.
- e) Estimate the number of women who supported the home team.
- f) Out of the men in the population, what percentage correctly predicted the score?
- g) Estimate the number of people at the match who did not correctly predict the score.
- h) Estimate the percentage of the population that supported the home team.

