

GCSE MATHS

Sampling and scatter graphs

Answers

- Q1** (a) All 900 pupils at the school. (b) 60.
- Q2** Football players may favour football facilities; other pupils are excluded.
- Q3** People with strong views may be more likely to respond.
- Q4** No. A larger sample from the same unrepresentative group can still be biased.
- Q5** How would you rate the value for money of school lunches?
- Q6** Number all pupils 1 to 500; generate 20 distinct random numbers and select those pupils.
- Q7** Every pupil has the same chance of selection; the first arrivals may travel in a different way from other pupils.
- Q8** 35%.
- Q9** 20.
- Q10** 24, 20, 36.
- Q11** Monday-morning customers may spend differently from evening or weekend customers.
- Q12** Positive correlation.
- Q13** Negative correlation.
- Q14** No. Correlation alone does not establish cause and effect.
- Q15** Check the measurement and recording; keep it if it is a valid observation.
- Q16** Points at (1, 2), (2, 4), (3, 5), (4, 8), (5, 9).
- Q17** An increasing straight line close to $y = x + 2$, with points roughly balanced on each side.
- Q18** About 7.
- Q19** $x = 4$: it lies within the observed range; $x = 20$ is far outside it.
- Q20** 7.
- Q21** 210.
- Q22** A: random selection gives pupils a fair chance; the volunteers may be unrepresentative.
- Q23** 2000.