



QUESTION WORKBOOK

Measures of location and spread

Statistics · Year 12–13

7 questions · 20 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

A1 For the data 4, 7, 7, 9, 13, write down the mean, median and mode. [2]

A2 For 25 values, $\Sigma x = 450$ and $\Sigma x^2 = 8500$. Find the mean and the standard deviation. [3]

SECTION B · Standard

B1 Forty journey times are grouped: 8 in $0 \leq t < 10$; 14 in $10 \leq t < 20$; 12 in $20 \leq t < 30$; 6 in $30 \leq t < 40$. Use interpolation to estimate the median. [4]

B2 Data are coded by $y = (x - 100)/5$, and the coded values have mean 4 and standard deviation 2. Find the mean and standard deviation of the original data. [3]

- B3** State the effect on the mean and on the standard deviation of (a) adding 7 to every value, (b) multiplying every value by 3. [3]

SECTION C · Stretch

- C1** Two machines fill bags with mean 500 g each; machine A's masses have $\sigma = 2$ g, machine B's $\sigma = 9$ g. Compare the machines in context. [3]

- C2** The standard deviation squares each deviation from the mean before averaging. Explain what squaring achieves. [2]
