

KS3 – Statistical Diagrams – Answers

Section A – Stem & Leaf

Q1

Stem 1 | 2 3 4 5 6 7 8 9; Stem 2 | 1 2 3 4 5 6 8. Example key: 1 | 2 = 12 years.

Q2

Stem 2 | 7 8 9; Stem 3 | 1 2 3 4 5 6 8 9; Stem 4 | 0 1 4 5. Key e.g. 3 | 4 = 34 marks.

Median = 35; range = 18.

Q3

a) 35

b) 32

c) 20

d) A key explains the place value/meaning of the stem and leaf, e.g. whether 2 | 4 means 24, 2.4, etc.

Section B – Scatter Graphs

Q4

Correctly plotted eight points; sensible line of best fit; positive correlation.

Q5

Correctly plotted seven points; sensible downward line of best fit; negative correlation.

Q6

- a) As one variable increases, the other tends to increase.
- b) As one variable increases, the other tends to decrease.
- c) There is no clear relationship/trend.
- d) No. Correlation does not prove causation.

Section C – Frequency Polygons

Q7

Midpoints: 2.5, 7.5, 12.5, 17.5, 22.5. Plot (2.5,2), (7.5,6), (12.5,10), (17.5,7), (22.5,3) and join in order.

Q8

a) 1.5, 4.5, 7.5, 10.5, 13.5

b) (1.5,2), (4.5,5), (7.5,9), (10.5,6), (13.5,3)

c) (7.5, 9)

Section D – Histograms

Q9

Histogram bars over 0–3, 3–6, 6–9, 9–12, 12–15 with heights 4, 8, 12, 7, 3. Bars touch; axes/scales labelled.

Q10

0–2: density 3; 2–5: density 4; 5–10: density 2.

Q11

Densities: 0–3 = 2; 3–6 = 3; 6–12 = 2. Histogram bars use these heights, touch, and axes are correctly labelled.

Section E – Box Plots

Q12

- a) 3
- b) 6
- c) 9
- d) 14
- e) 18

Q13

Minimum 4; lower quartile 7; median 12; upper quartile 18; maximum 22. Correct box plot on labelled 0–24 scale.

Q14

- a) 12
- b) 6
- c) 14
- d) 9
- e) Group A, because its IQR is smaller (6 compared with 9).