
Question 1

(a) $\frac{42g}{8}$

(b) cf

(c) 0.0128

Question 2

(a) $41 \times 2.5 + 26 \times 7.5 + \dots$
 $102.5 + 195 + 250 + 175 + 67.5$
"790" $\div 100 = 7.9$ years

(b) 41, 67, 87, 97, 100

(c) Points correct. Curve or straight line segments

(d) 75 or $75^{\frac{3}{4}}$ years indicated
 ≈ 11.5 (curve) ≈ 12 (lines)

Notes:

(a) M1 for $\sum fx$ using at least 3 consistent values in the intervals including both ends

M1 (dep) for use of correct mid-interval values

M1 for $\sum fx$ and division by 100 (dep on first M1)

A1 cao

(b) B1

(c) B1 for 4 or 5 points correctly plotted at ends of intervals (\pm half a square), ft from sensible table in (b)

B1 ft from their points if previous B1 scored,

Or if B1 scored in (b) and points plotted consistently

(d) M1

A1 ft from graph (\pm half a square) if B2 or B1 in (c)

Question 3

- (a) 6, 23, 45, 90, 116, 135, 144, 150
- (b) cum freq diag drawn: ignore line between first point and the origin
- (c) 60% of 150 = 90
 $150 - 90 = 60$
pass mark about 42 – 45 marks

Question 4

(a) $3 \times 1, 8 \times 2, 13 \times 5, 18 \times 7, 23 \times 8, 28 \times 2 = 3, 16, 65, 126, 184, 56$
 $450 \div 25$

= 18 points

(b) 1, 3, 8, 15, 23, 25

(c) graph drawn

(d) 18.5 points

Notes:

(a) M1 for using values in the intervals (including both ends) consistently (at least 4 correct) x frequencies

M1 (dep) for adding fx values and $\div 25$

A1 cao for 18

(b) B2 all correct (B1 if 5 or 4 correct or no more than one independent numerical error)

(c) B1 for axes drawn and labelled with words

B1 for points plotted with correctly fit cf at ends of intervals with a continuous scale (condone one plotting error) B1 fit their points for smooth curve or line segments (last two B marks dependent on at least B1 in part (b))

(c) B1 for using 13 or 12.5 and fit for an answer from graph ± 0.5 (dep on at least B1 in (b))

SC: If use fx values instead of f for cf table give 0 for (b), but in (c) and (c) ignore the deps, and in (c) allow use of half the candidate's largest cf

Question 5

- (a) 60.75
- (b) 4, 22, 90, 169, 200
- (c) Points correct
curve or line segments
- (d) Approx 13

Question 6

- | (a) Mid point | Total |
|---------------|--------|
| 162.5 | 1137.5 |
| 167.5 | 1005 |
| 172.5 | 345 |
| 177.5 | 1775 |
| 182.5 | 912.5 |
| Total | 5175 |
- Mean = $5175 \div 30 = 172.5$ cm
- (b) 7, 13, 15, 25, 30
- (c) Median = 175
Interquartile range = 17

Question 7

- (a) plot points, joined with smooth curve/line
- (b) segments $240 - 170 = 70$
- (c) 10% is 12 houses. Read off where $cf = 120 - 12 = 108$; floor area = 275 m^2

Question 8

- (a) 1200
- (b) Correct graph
- (c) About 53

Question 9

- (a) CF table
- (b) Correct graph
- (c) (i) $\approx 205 \text{ s}$
Accept 3 mins 25 s
- (ii) ≈ 51

Question 10

Q, P, S, R, T

Question 11

- (a) 65 houses
- (b) £45 000

Question 12

22

Question 13

5.1 – 5.2
16

Question 14

- (a) $80 < w \leq 85$
- (b) (4), 14, 48, 80, 96, (100)
- (c) cf graph
- (d) (i) ≈ 7 kg
(ii) ≈ 10 (curve)
 ≈ 12 (line segments)