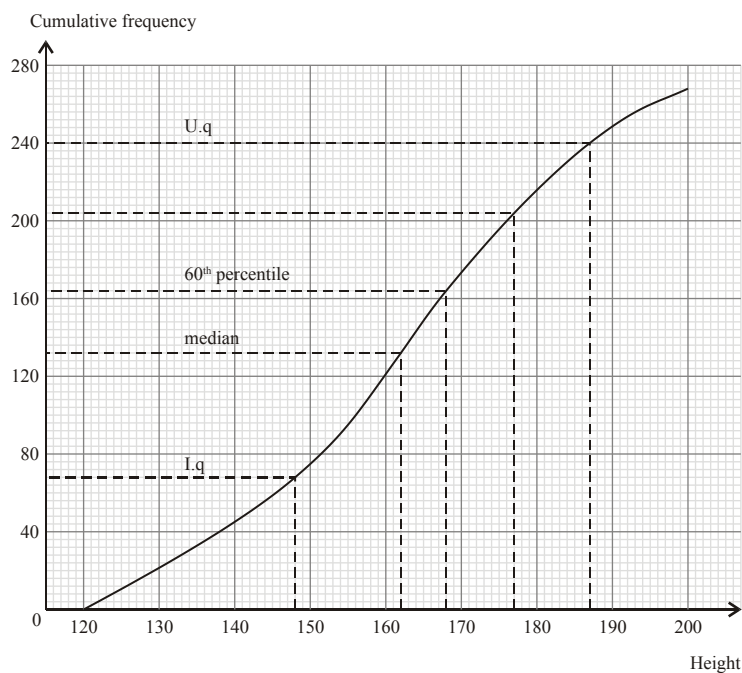


IGCSE Cumulative Frequency Answers

0 min
0 marks

1.



- (a) $160 < h \leq 170$ B1
- (b) (i) Mid values 125, 135, 145, 155, 165, 175, 185, 195 M1
 Allow 1 slip
 $(15 \times 125 + 24 \times 135 + 36 \times 145 + 45 \times 155 + 50 \times 165 + 43 \times 175 + 37 \times 185 + 20 \times 195)$ M1
 Dep on mid values ± 0.5 , allow 1 slip in mid-values
 (43830)
 $\div 270$ M1
 Dep on previous method
 162 or better A1
 (162.333..) www4
- (ii) Mid-values are an estimate of each interval o.e. B1
 e.g. exact values not given
- (c) $p = 15, q = 39, r = 75$ B2
 B1 for 2 correct.
 If no labels, take in order given
- (d) Correct scales S1
 9 points correctly plotted ft P3ft
 P2 ft for 7 or 8 correct acc. 1 mm
 P1 ft for 5 or 6 correct
 Curve or line through 9 points C1ft
 Dep on 'S' shape within $\frac{1}{2}$ small square of points
- (e) (i) 162 to 164 B1

(ii)	176 to 178	B1
(iii)	28 to 30	B1
(iv)	167.5 to 168.5	B1
(f)	Uses 240 or 241 on cumul, freq. axis e.g. annotates graph or shows values in working	M1
	186.5 to 188 ww2	A1

[19]

- | | | |
|-----------|--|------|
| 2. | (i) 14 to 14.2 c.a.o. | B1 |
| | (ii) 6 c.a.o. | B1 |
| | (iii) 28 c.a.o. | B1 |
| | (iv) 22
their (iii) – their (ii) dep on both values being
less than 50 and (iii) is greater than (ii) | B1ft |
| | (v) 31.5 to 32 | B1 |
| | (vi) 60 c.a.o. | B1 |

[6]

4. (a) 3.365 to 3.375 Inclusive 1
- (b) 0.26 to 0.27 2*
M1 3.52 **and** 3.25 to 3.26 seen (even on diagram)
- (c) 55, 56 or 57 1

[4]

5. (a) (i) **36** (36.0 – 36.4) B1
- (ii) **50** (50.0 – 50.4) B1
- (iii) **29** (28.6 – 29.4) B1
- (iv) **20** B2
If B0, SC1 for 19 or 21 or 180 seen
- (b) (i) **$p = 16, q = 4$** B1, B1
If B0, SC1 if **p** and **q** add up to 20

- (ii) $\left(\frac{7220}{200}\right) = \mathbf{36.1}$ cso www4 B4

Answer 36 scores 4 marks after some correct working shown with no incorrect working seen

M1 for using mid-values at least four correct from 5, 15, 25, 35, 45, 55, 65, 75

M1 (dep on correct mid values or mid-values ± 0.5) for Σfx (at least four correct products)

M1 (dependent on 2nd M1) for dividing sum by 200 or 180 + their **p** + their **q**

- (c) **8.2** (8.19 – 8.20), **11.4, 5** (5.00 – 5.01) B4
B3 for 2 correct
or **B2** for 1 correct
After B0, **SC2** for fd's 2.7(3...) o.e.,
3.8 o.e, 1.6(6...) o.e.
or SC1 for 2 of fd's correct

[15]

6.	(a)	(i)	174 to 174.25 (cm) c.a.o.	B1
		(ii)	167 (cm) c.a.o.	B1
		(iii)	12 (cm) c.a.o.	B1
		(iv)	37 c.a.o. If B0, B1 for 63 seen in working space	B2
	(b)	(i)	10, 25	B1
		(ii)	155, 165, 175, 185 s.o.i. allow 1 slip	M1
			(their $10 \times 155 + \text{their } 25 \times 165 + 47 \times 175 + 18 \times 185$)	M1
			Use of Σfx where the x 's are in/on their intervals (allow one more slip) (17 230)	
			$\div 100$	M1
			(dependent on second M) $\div 100$	
			172 or 172.3 (cm) c.a.o. www 4	A1

[10]