

9.4 Answers

GCSE Mathematics Statistics II : Handelling and Processing Data

9.4.1 Solution (Example)

(a)

Number of lengths	Frequency	Cumulative Frequency
$1 \leq l \leq 10$	3	3
$11 \leq l \leq 20$	16	19
$21 \leq l \leq 30$	21	40
$31 \leq l \leq 40$	22	62
$41 \leq l \leq 50$	27	89
$51 \leq l \leq 60$	32	121
$61 \leq l \leq 70$	33	154
$71 \leq l \leq 80$	18	172
$81 \leq l \leq 90$	21	193
$91 \leq l \leq 100$	7	200

(b) See next page for graph.

(c) From the graph....

(i) Median = 53

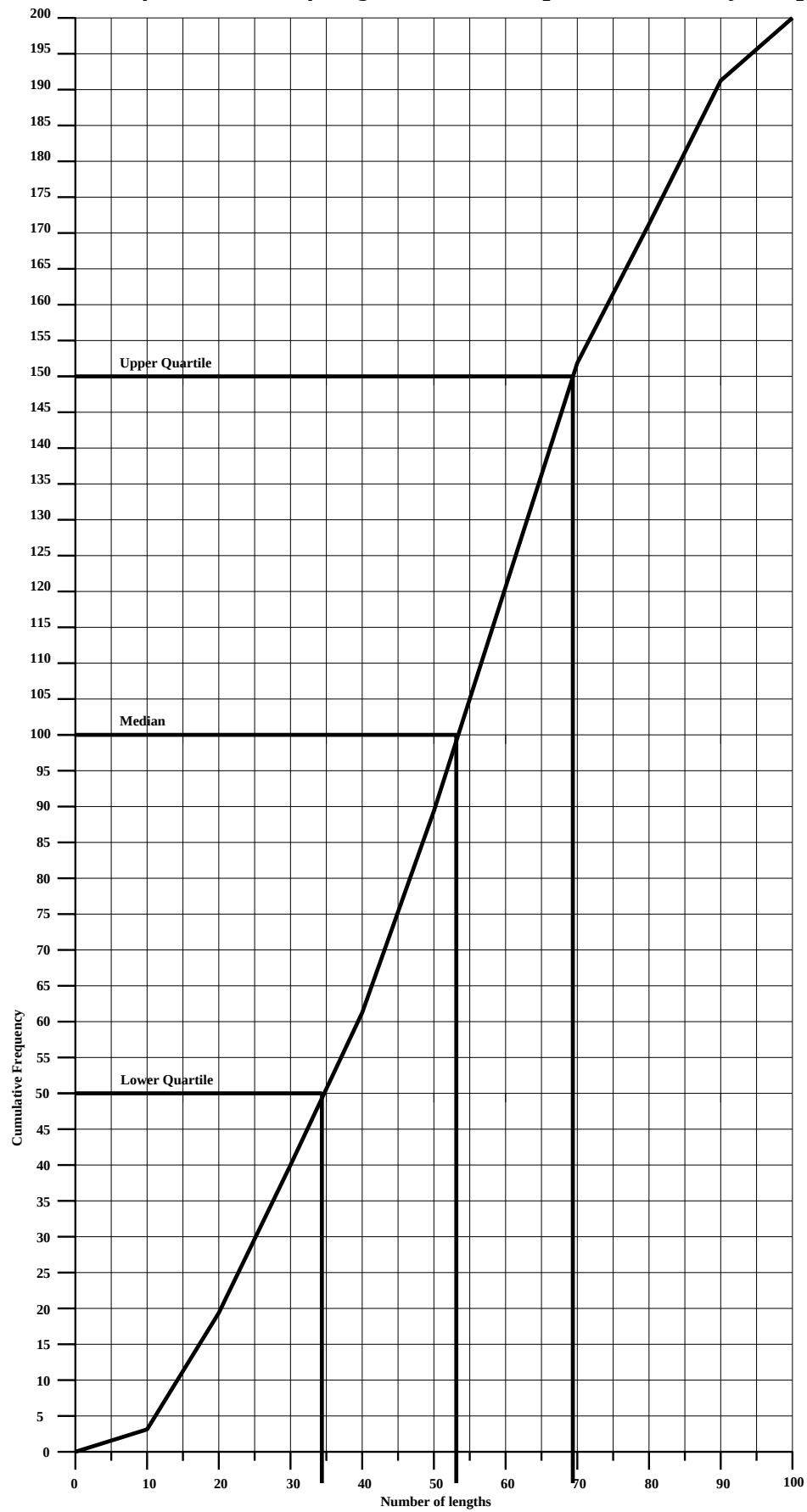
(ii) Lower quartile = 34

(iii) Upper quartile = 69

(d) Interquartile range = $69 - 34 = 35$

(e) $200 - 162 = 38$ children swam **MORE** than 75 lengths

***Cumulative frequency curve showing
the distribution of the number of lengths swum in a sponsored swim by 200 pupils***



9.4.2 Solution (Exercise)

Answer 1

(a)

Age (t years)	Frequency	Cumulative Frequency
$0 < t \leq 10$	55	55
$10 < t \leq 20$	60	115
$20 < t \leq 30$	40	155
$30 < t \leq 40$	22	177
$40 < t \leq 50$	13	190
$50 < t \leq 60$	10	200

(b) See next page for graph.

(c) From the graph....

(i) Median = 17

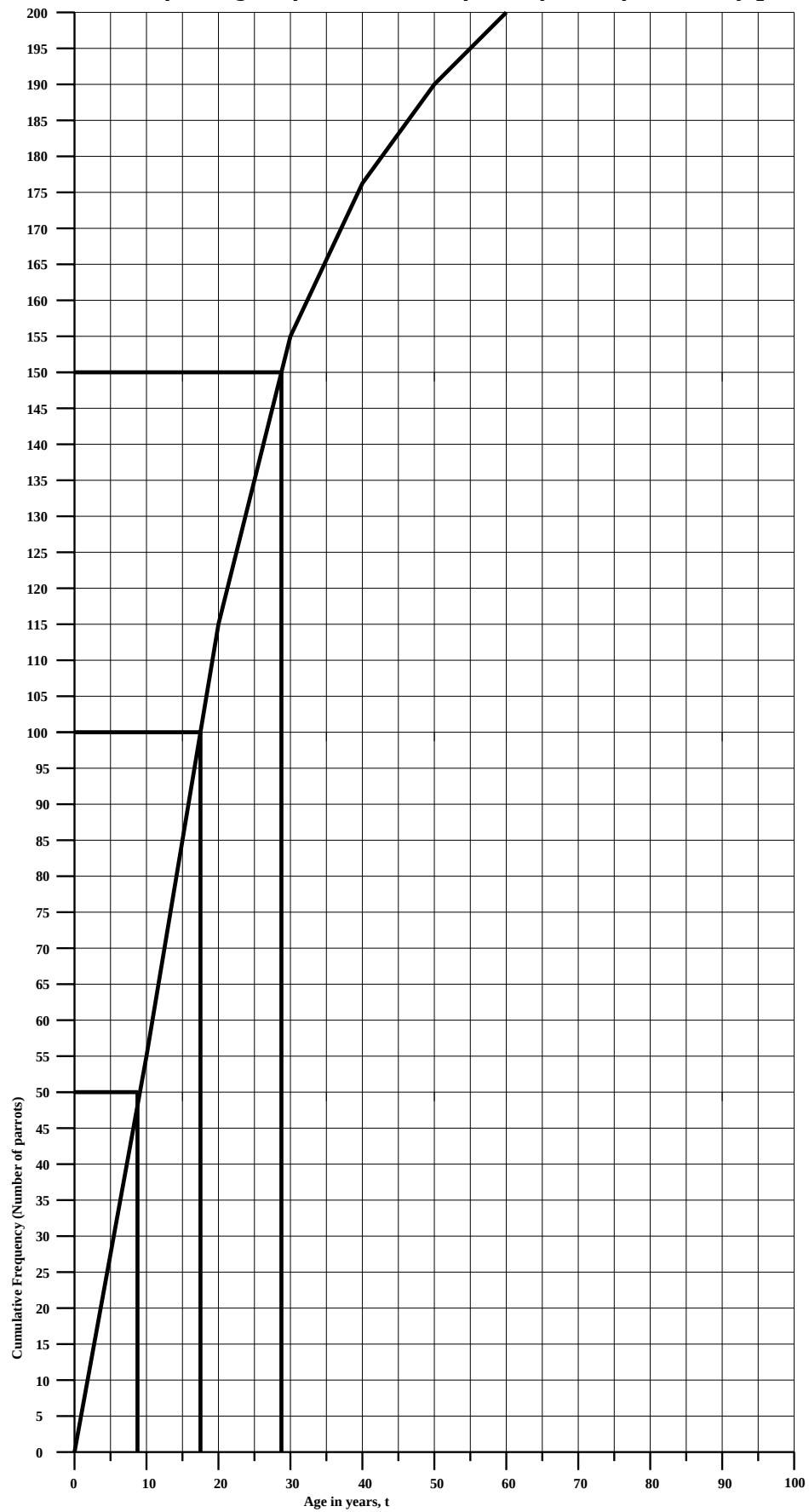
(ii) Lower quartile = 8

(iii) Upper quartile = 28

(d) Interquartile range = $28 - 8 = 20$

(e) $200 - 166 = 34$ parrots lived **MORE** than 35 years

*Cumulative frequency curve showing
the distribution of the ages of the birds in a flock of 200 African Grey parrots.*



Answer 2**(a) (i)***total weight*

$$\begin{aligned}
 &= (1 \times 82) + (3 \times 138) + (5 \times 255) + (7 \times 173) + (9 \times 102) + (11 \times 50) \\
 &= 82 + 414 + 1275 + 1211 + 918 + 550 \\
 &= 4450 \text{ kg} \quad \text{That is } 4.45 \text{ tonnes}
 \end{aligned}$$

(ii)

$$\begin{aligned}
 \text{mean} &= \frac{4450}{800} \\
 &= 5.56 \text{ kg}
 \end{aligned}$$

(b)

Weight (w kg)	Frequency	Cumulative Freq	
$0 < w \leq 2$	82	82	
$2 < w \leq 4$	138	220	
$4 < w \leq 6$	255	475	
$6 < w \leq 8$	173	648	
$8 < w \leq 10$	102	750	
$10 < w \leq 12$	50	800	

(c) See graph on next page : check points plotted at **END OF INTERVALS****(d) (i)** Median is 4.3 kg**(ii)** Lower Quartile is 3.8 kg**(iii)** Upper Quartile is 7.3 kg**(e)** Interquartile range is 3.5 kg**(f)** 380 parcels weigh less than 5.2 kg

*Cumulative frequency curve showing
the distribution of the weights of 800 parcels.*

