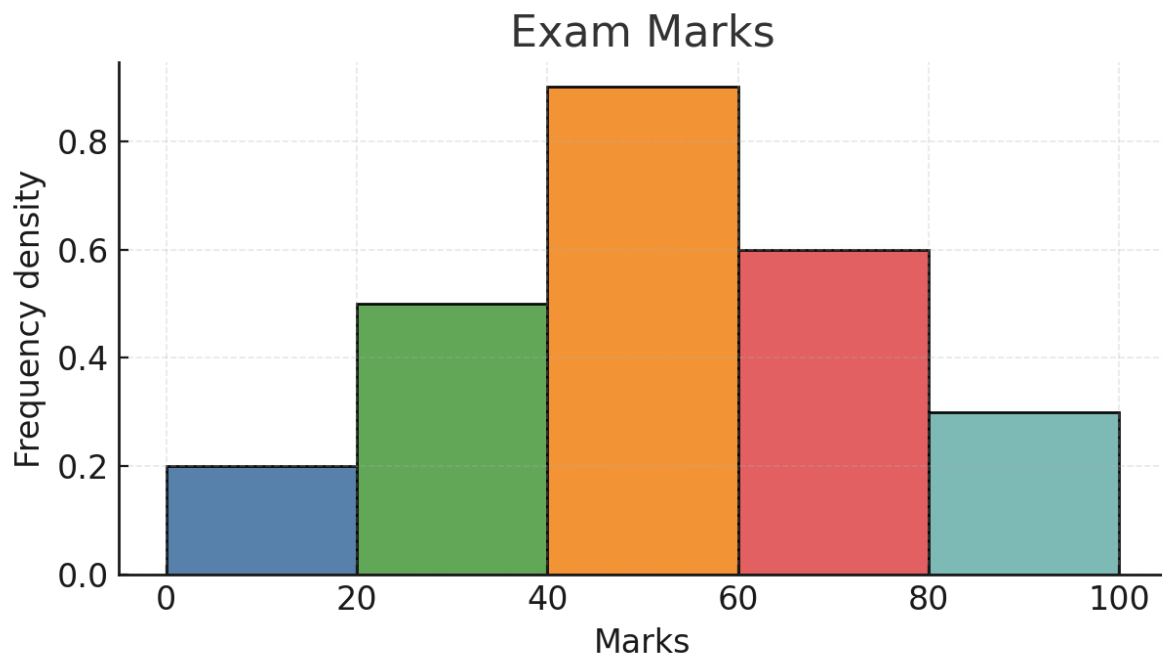


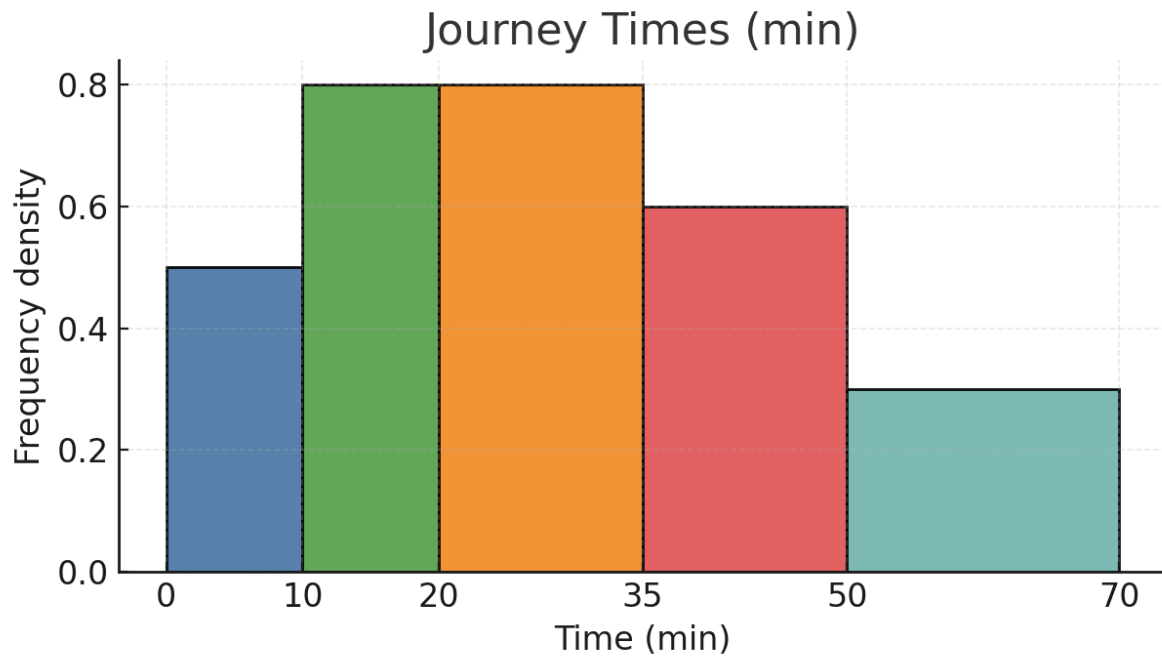


Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Estimate how many students scored 60 marks or more.

- Which class has the highest frequency density?

Q2.

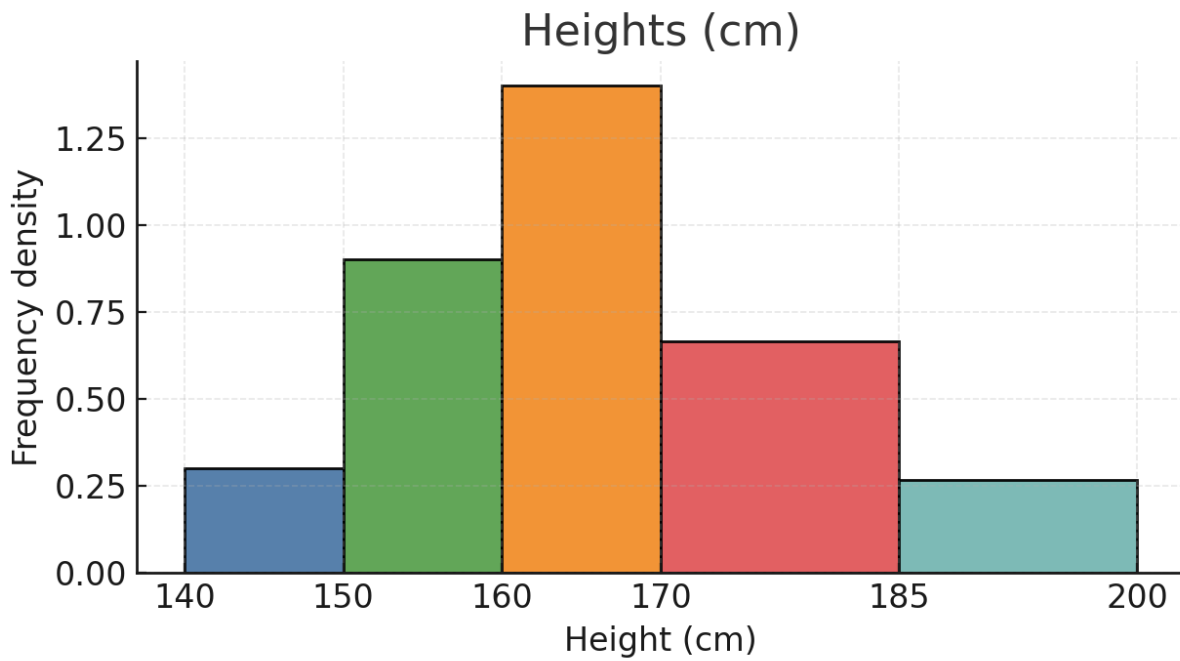


Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Approximately how many journeys took 35 minutes or longer?

- What is the width of the longest-time class?

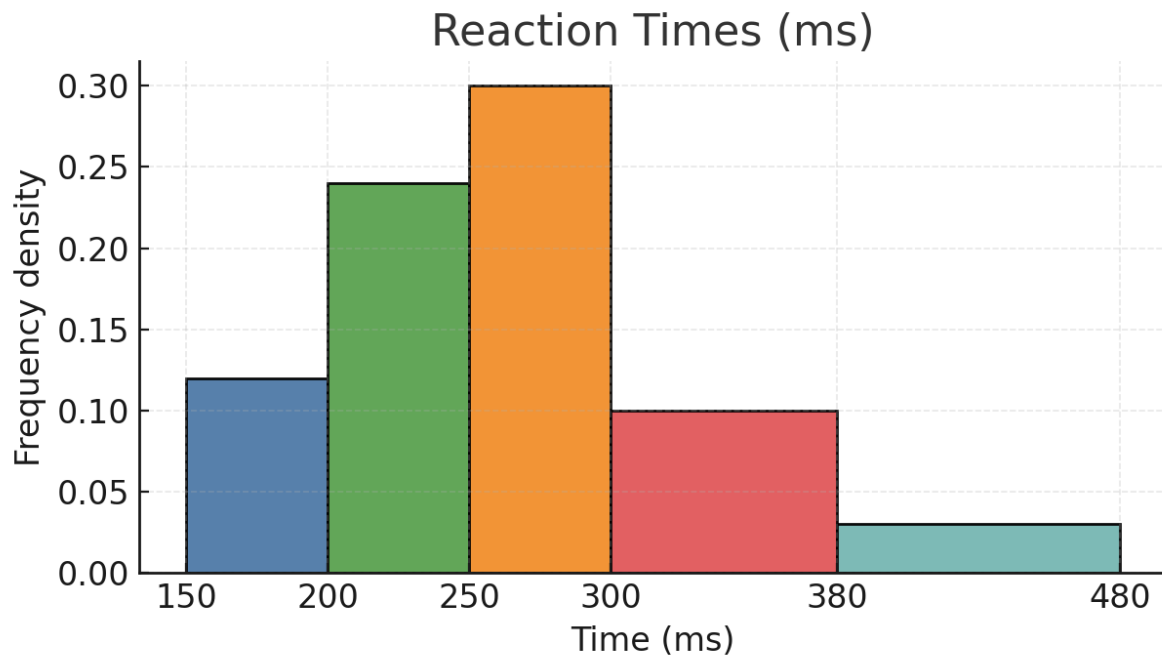
Q3.



Key facts: frequency density = frequency ÷ class width. Area under a bar equals the frequency in that class.

- Estimate how many people are at least 170 cm tall.
- Which interval has the lowest frequency density?

Q4.

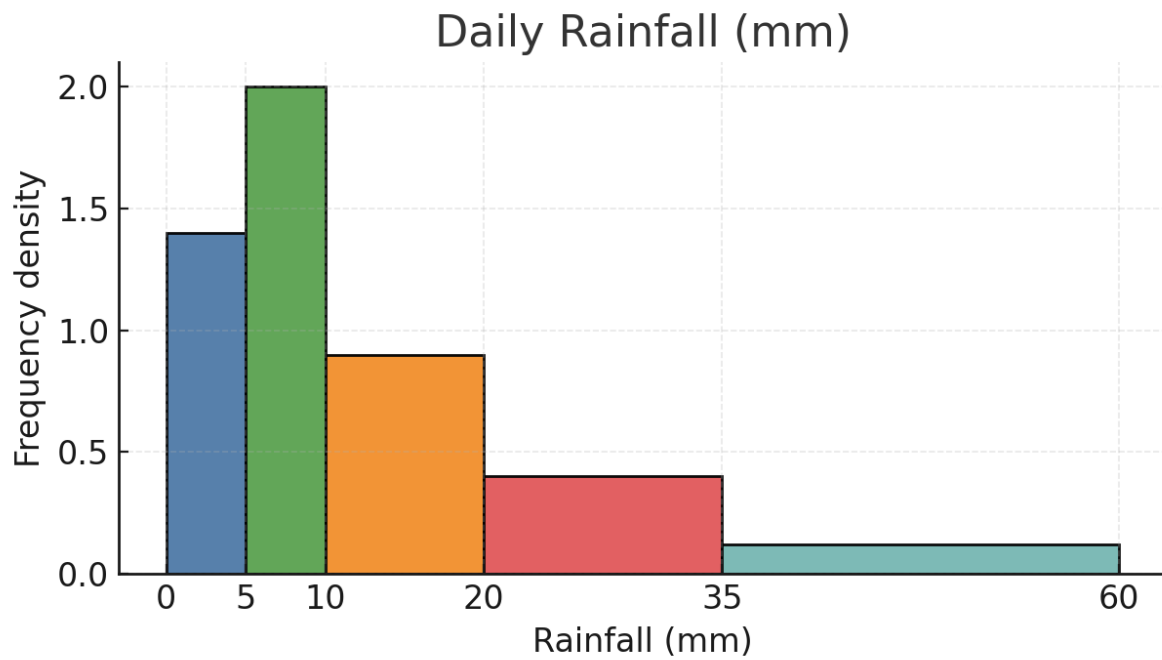


Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- How many reaction times are under 300 ms (estimate)?

- Which class has the greatest frequency density?

Q5.



Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Roughly how many days had rainfall of at least 20 mm?

- What is the modal class interval?

Q6.

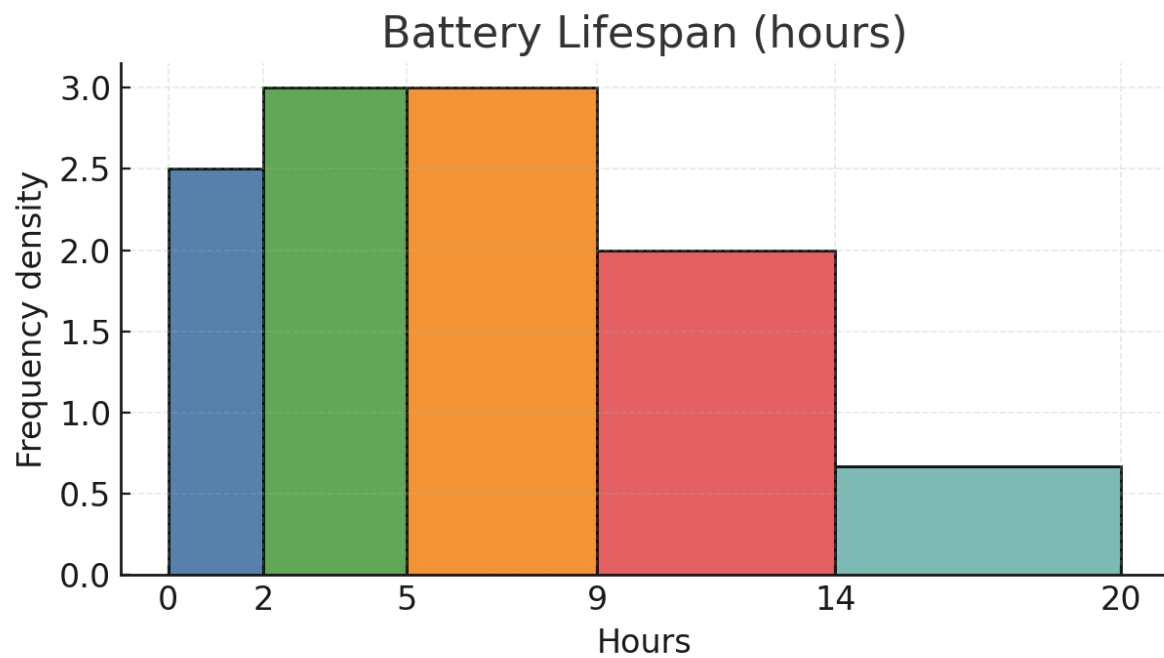


Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Estimate how many cyclists were going at least 22 km/h.

- Which class interval is the widest?

Q7. Battery Lifespan (hours) — Answers & Hints

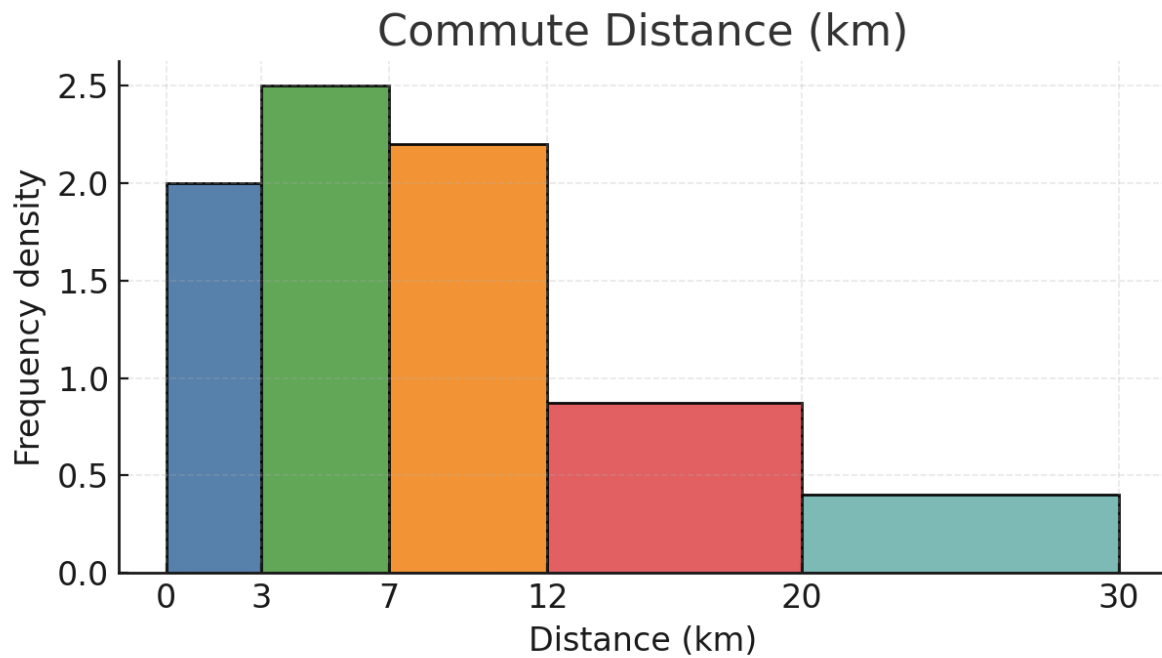


Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Approximately how many batteries lasted 9 hours or more?

- Which class has the highest frequency density?

Q8. Commute Distance (km) — Answers & Hints

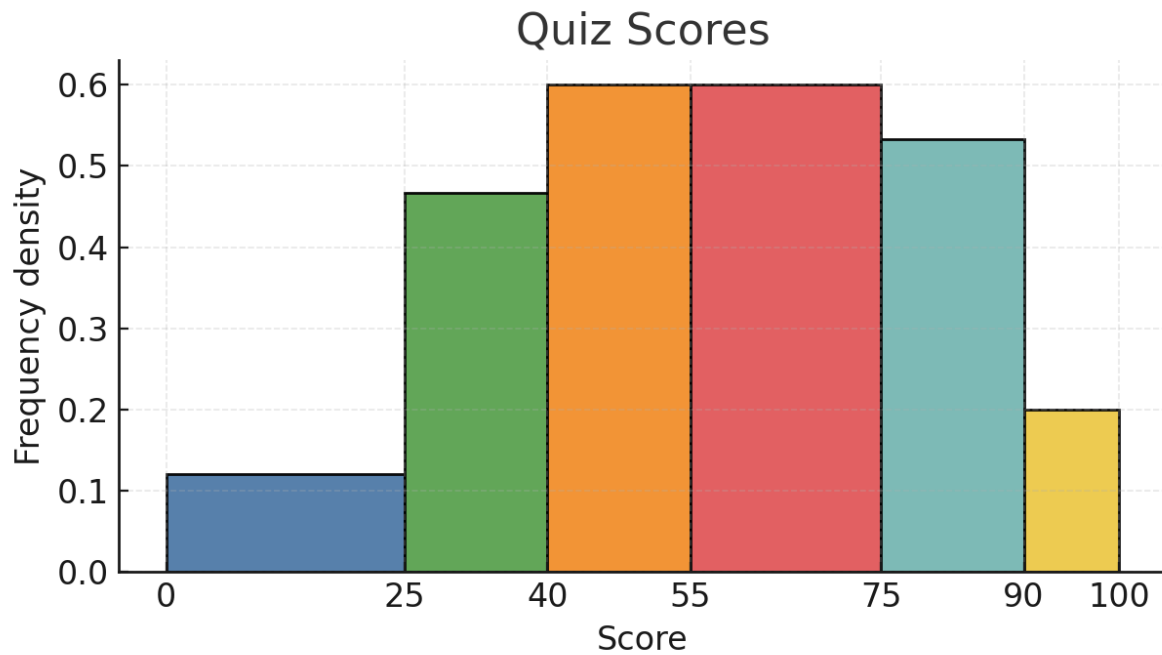


Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Estimate the number of commutes of at least 12 km.

- What is the width of the shortest-distance class?

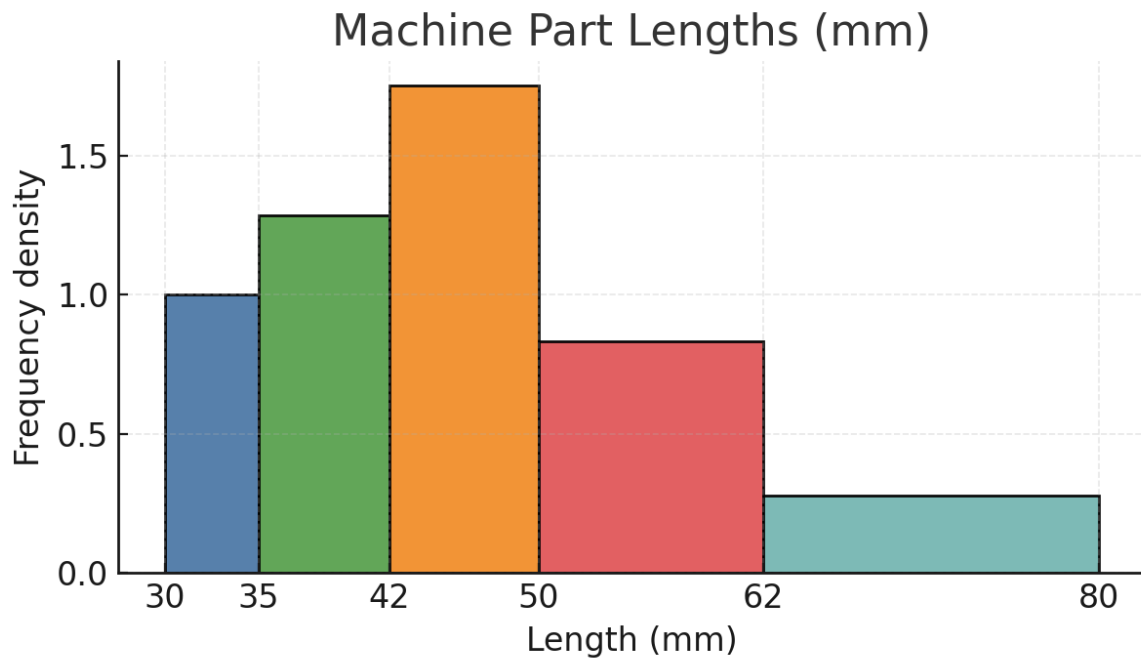
Q9.



Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Roughly how many scores were at least 55?
- Which class has the lowest frequency density?

Q10.



Key facts: frequency density = frequency $\div$ class width. Area under a bar equals the frequency in that class.

- Estimate how many parts were at least 50 mm long.

- Which interval has the greatest frequency density?

Q1 — Exam Marks

- ≥ 60 : $0.6 \times 20 = 12$; $0.3 \times 20 = 6$; **total = 18**
- Highest density: [40, 60)

Q2 — Journey Times

- ≥ 35 min: $0.6 \times 15 = 9$, $0.3 \times 20 = 6$; **total = 15 journeys took 35 minutes or longer**
- Longest-time width: 20 (interval [50, 70])

Q3 — Heights

- ≥ 170 cm: $0.6 \times 15 = 9$, $0.3 \times 15 = 4.5$; $9 + 4.5 = 13.5$ **round up to 14 people at least 170cm tall**
- Lowest density: [185, 200] (≈ 0.27)

Q4 — Reaction Times

- < 300 ms: $0.10 \times 50 = 5$, $0.23 \times 50 = 11.5$, $0.29 \times 50 = 14.5$; **$5 + 11.5 + 14.5 = 31$ reaction times under 300ms**
- Highest density: [250, 300] (≈ 0.3)

Q5 — Daily Rainfall

- ≥ 20 mm: $0.4 \times 15 = 6$, $0.1 \times 25 = 2.5$; **total = 9 days with rainfall of at least 20mm**
- Modal class: [5, 10)

Q6 — Cycling Speeds

- ≥ 22 km/h: $0.9 \times 8 = 7.2$, $0.3 \times 12 = 3.6$; **total = 10.8 round up to 11 cyclists**
- Widest class: [30, 42] (width 12)

Q7 — Battery Lifespan

- ≥ 9 h: (compute from histogram at/above 9)
- Highest density: [2, 5] (≈ 3)

Q8 — Commute Distance

- ≥ 12 km: (compute from histogram at/above 12)
- Narrowest class: [0, 3] (width 3)

Q9 — Quiz Scores

- ≥ 55 : (compute from histogram at/above 55)
- Lowest density: [0, 25] (≈ 0.12)

Maths with Melissa

Q10 — Machine Part Lengths

- ≥ 50 mm: (compute from histogram at/above 50)
- Highest density: $[42, 50)$ (≈ 1.75)