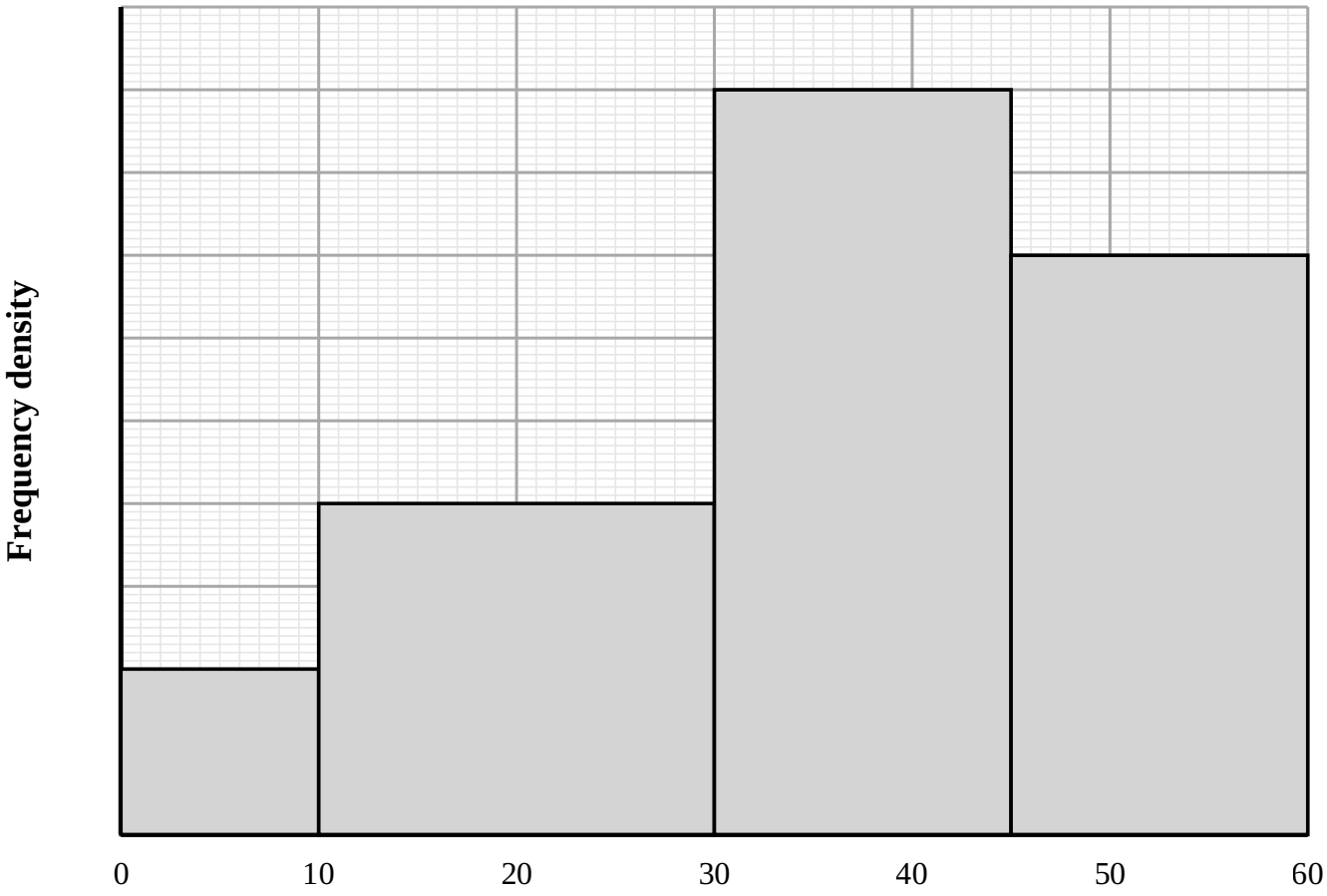
STATISTICS: HISTOGRAMS

Best Guess Mastery Worksheet (Target Grade 7/8)

I Do

The histogram gives information about the weights, in grams, of some strawberries.



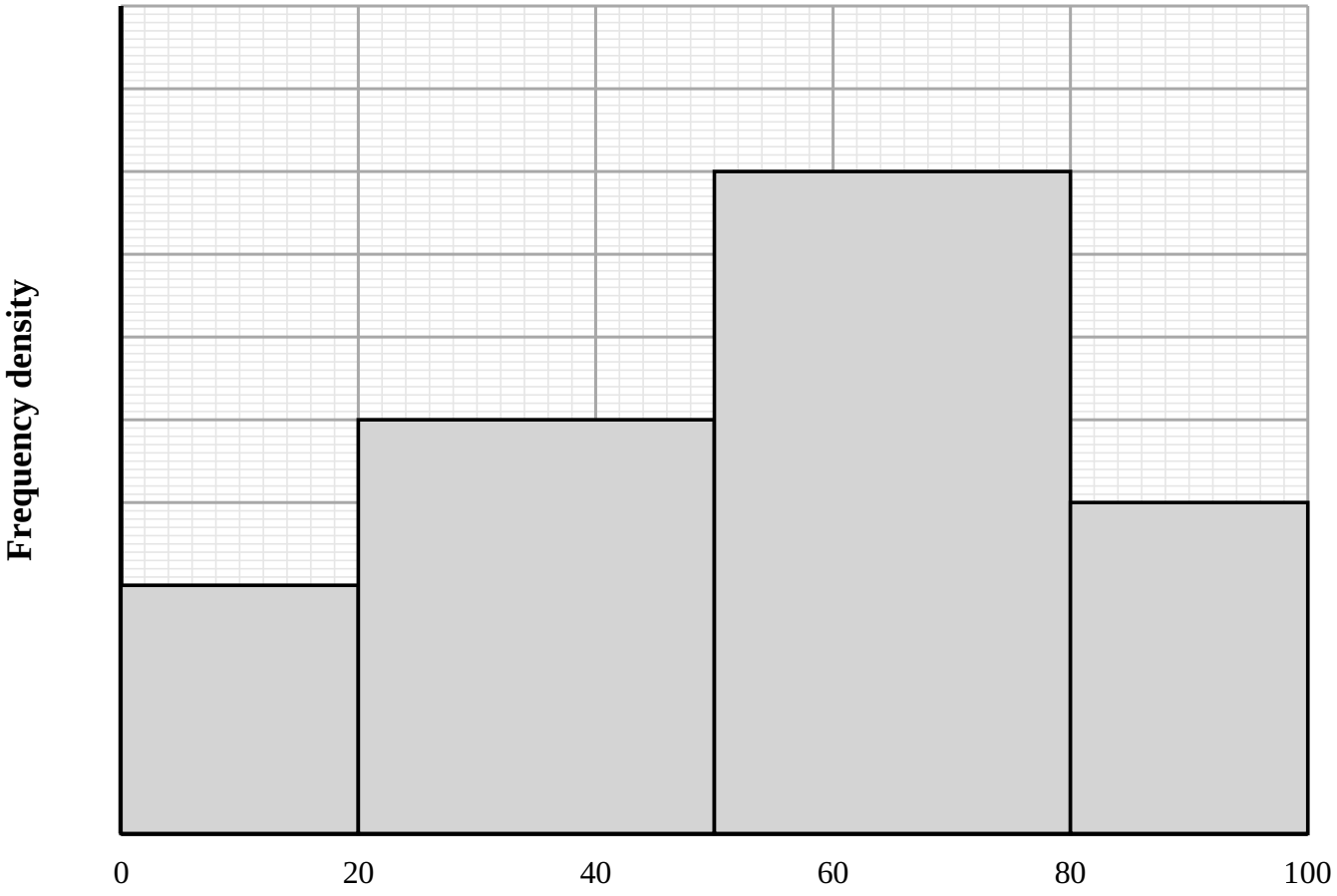
One of these strawberries is chosen at random. Work out an estimate for the probability that the strawberry has a weight between 25 grams and 50 grams.

STATISTICS: HISTOGRAMS

Best Guess Mastery Worksheet (Target Grade 7/8)

We Do

The histogram gives information about the weights, in grams, of some apples.



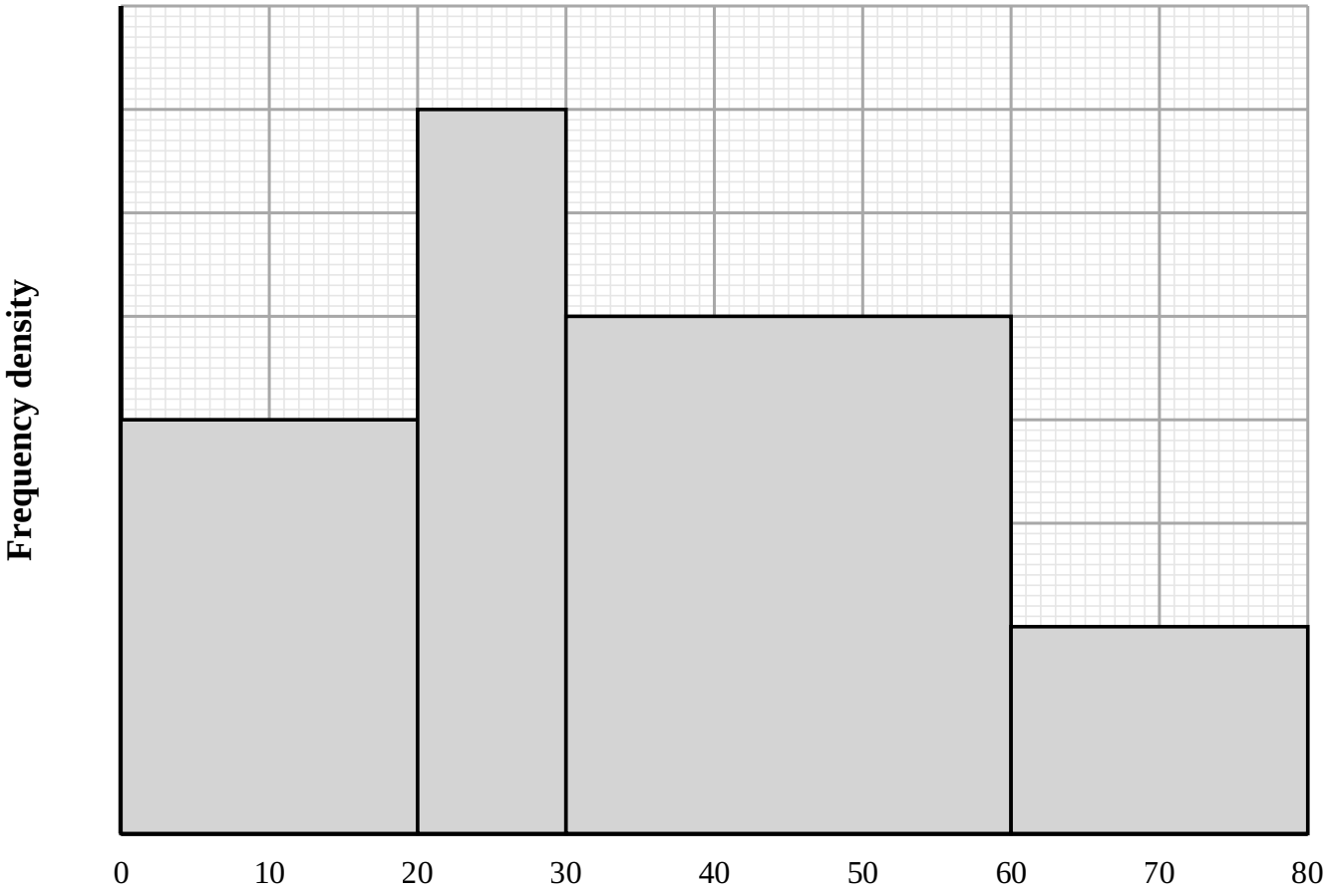
One of these apples is chosen at random. Work out an estimate for the probability that the apple has a weight between 30 grams and 70 grams.

STATISTICS: HISTOGRAMS

Best Guess Mastery Worksheet (Target Grade 7/8)

You Do 1

The histogram gives information about the weights, in grams, of some tomatoes.



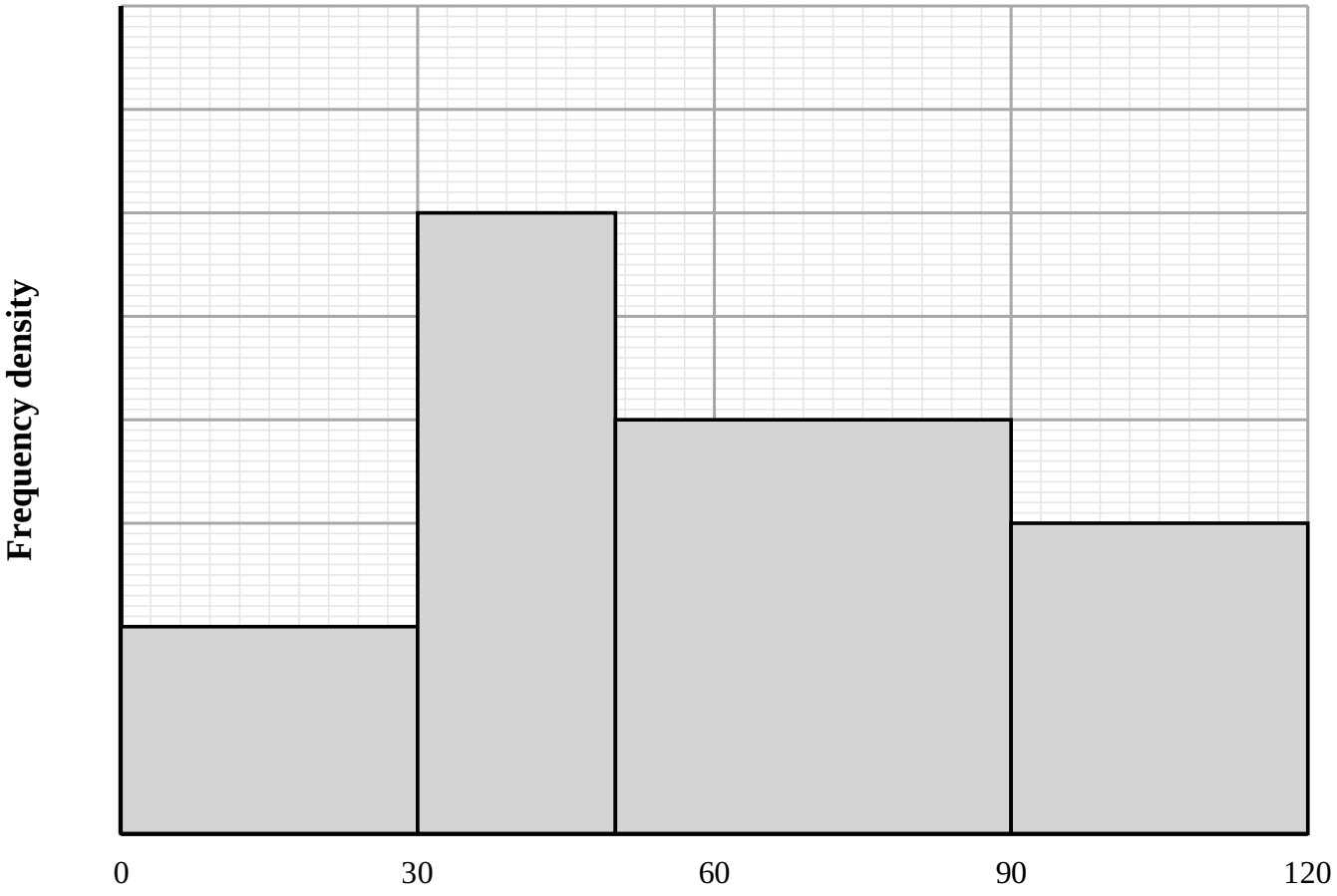
One of these tomatoes is chosen at random. Work out an estimate for the probability that the tomato has a weight between 25 grams and 70 grams.

STATISTICS: HISTOGRAMS

Best Guess Mastery Worksheet (Target Grade 7/8)

You Do 2

The histogram gives information about the weights, in grams, of some potatoes.



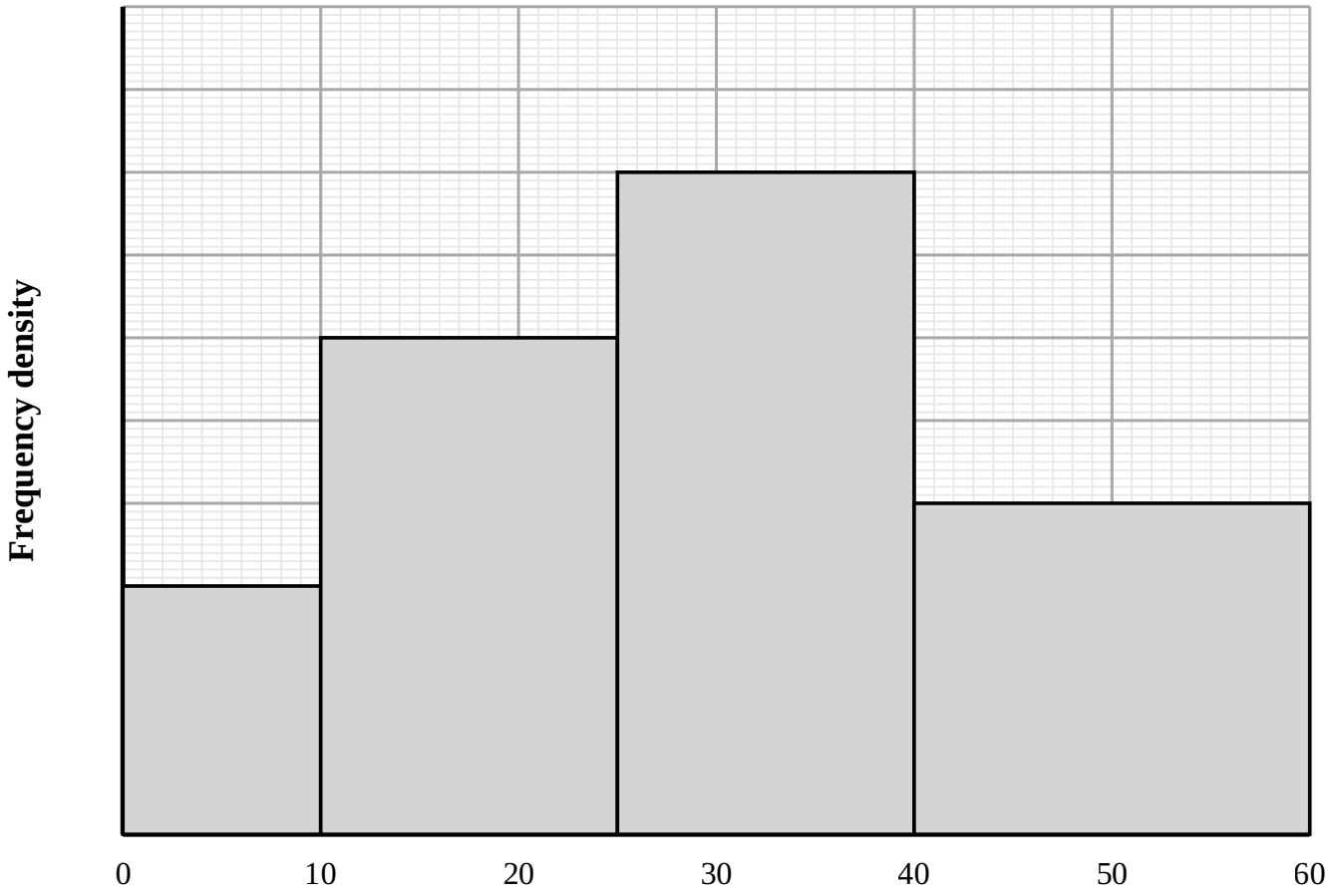
One of these potatoes is chosen at random. Work out an estimate for the probability that the potato has a weight between 40 grams and 100 grams.

STATISTICS: HISTOGRAMS (FINDING FREQUENCIES)

Best Guess Mastery Worksheet (Target Grade 7/8)

Challenge 1

The histogram shows the time taken, in minutes, for a group of people to complete a puzzle.



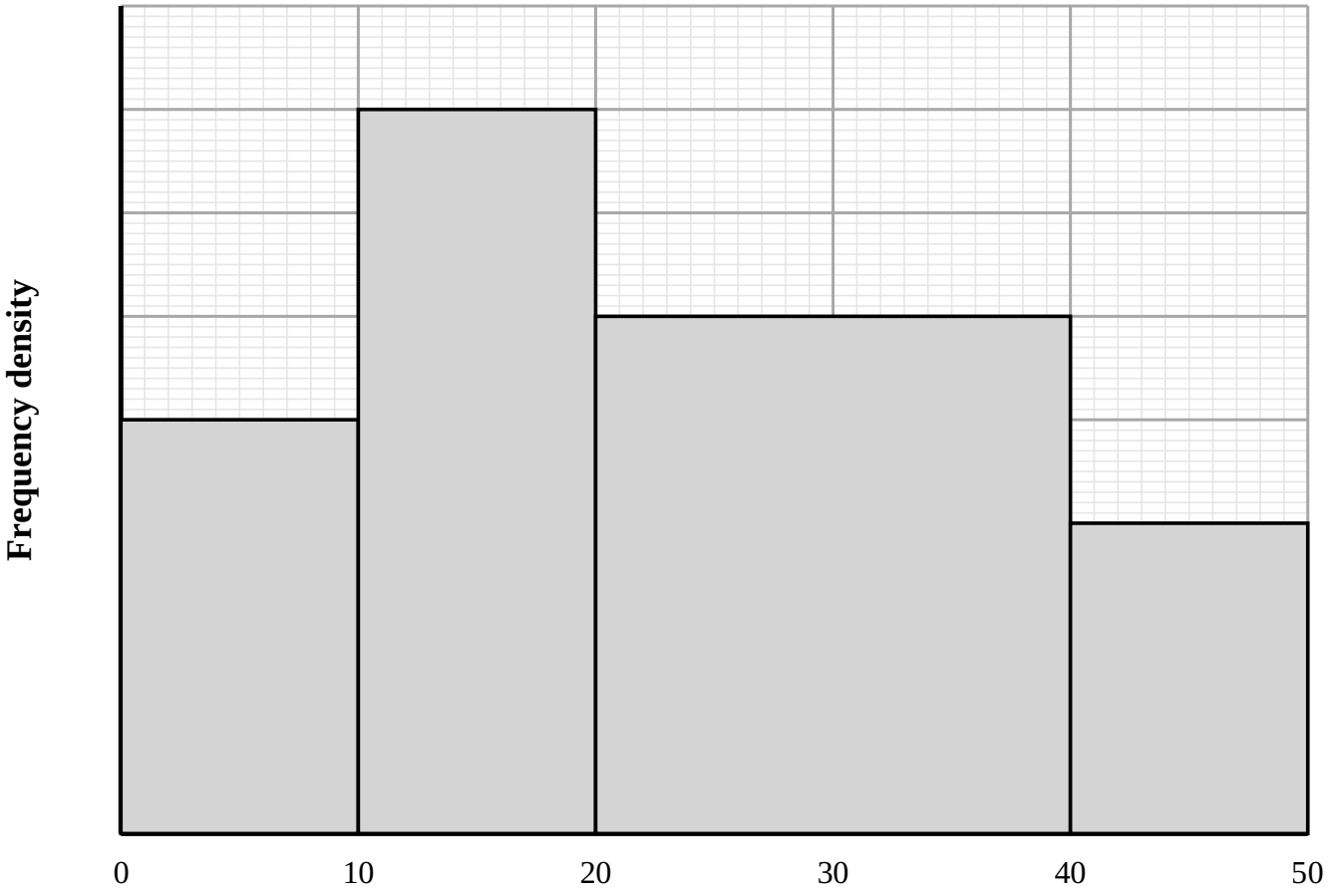
Given that 36 people took between 10 and 25 minutes, calculate the **total number of people** in the group.

STATISTICS: HISTOGRAMS (ESTIMATING THE MEDIAN)

Best Guess Mastery Worksheet (Target Grade 7/8)

Challenge 2

The histogram shows the distance travelled, in km, by some workers to their office.



Calculate an estimate for the **median** distance travelled.

ANSWERS & WORKED SOLUTIONS

I Do

1. Frequencies (class width × frequency density): 10 × 2 = 20, 20 × 4 = 80, 15 × 9 = 135, 15 × 7 = 105.

2. Total frequency = 20 + 80 + 135 + 105 = 340.

3. Frequency between 25 g and 50 g = (5 × 4) + 135 + (5 × 7) = 190.

4. Estimated probability = 190/340 = 19/34.

We Do

1. Frequencies: 20 × 3 = 60, 30 × 5 = 150, 30 × 8 = 240, 20 × 4 = 80.

2. Total frequency = 60 + 150 + 240 + 80 = 530.

3. Frequency between 30 g and 70 g = (20 × 5) + (20 × 8) = 260.

4. Estimated probability = 260/530 = 26/53.

You Do 1

1. Frequencies: 20 × 4 = 80, 10 × 7 = 70, 30 × 5 = 150, 20 × 2 = 40.

2. Total frequency = 80 + 70 + 150 + 40 = 340.

3. Frequency between 25 g and 70 g = (5 × 7) + 150 + (10 × 2) = 205.

4. Estimated probability = 205/340 = 41/68.

ANSWERS & WORKED SOLUTIONS

You Do 2

1. Frequencies: 30 × 2 = 60, 20 × 6 = 120, 40 × 4 = 160, 30 × 3 = 90.
2. Total frequency = 60 + 120 + 160 + 90 = 430.
3. Frequency between 40 g and 100 g = (10 × 6) + 160 + (10 × 3) = 250.
4. Estimated probability = 250/430 = 25/43.

Challenge 1

1. Area of the bar from 10 to 25 minutes = 15 × 6 = 90 grid squares.
2. Since 90 grid squares represent 36 people, each grid square represents 36 ÷ 90 = 0.4 people.
3. Total histogram area = (10 × 3) + 90 + (15 × 8) + (20 × 4) = 320 grid squares.
4. Total number of people = 320 × 0.4 = 128.

Challenge 2

1. Frequencies: 10 × 4 = 40, 10 × 7 = 70, 20 × 5 = 100, 10 × 3 = 30. Total frequency = 240.
2. Median position = 240 ÷ 2 = 120th value.
3. Cumulative frequencies are 40, 110 and 210, so the median lies in the 20 to 40 km class.
4. The median is 10 values into a class containing 100 values.
5. Distance into the class = (10/100) × 20 km = 2 km.
6. Estimated median distance = 20 km + 2 km = 22 km.