

Comparing Distributions

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **22**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** A café has two branches, North and South.
The manager records the waiting times, in minutes, of seven customers at each branch.

North	6	9	5	8	7	10	4
South	2	14	7	3	12	5	11

- (a) Work out the median and the range for each branch.
Write your answers in the table.

	Median (minutes)	Range (minutes)
North		
South		

[4 marks]

- (b) The manager wants the branch where the waiting time is more predictable.
Which branch should she choose? Give a reason.

[1 mark]

- 2 The table shows information about the points scored by two basketball teams.

	Mean	Range
Team A	62	15
Team B	68	34

Compare the scores of the two teams.

Write one comparison about the average and one about the spread.

[2 marks]

- 3 The range of the times for Class X to run 100 m is 6 seconds.

The range for Class Y is 4 seconds.

Sara says, “*On average, Class Y was faster.*”

Is Sara correct? Tick a box.

Give a reason for your answer.

[1 mark]

☐ Yes

☐ No

- 4 Tom cycles to school. Here are his journey times, in minutes, for eight days.

22 31 18 27 24 35 19 28

- (a) Work out the mean of Tom's times.

[2 marks]

Answer _____ minutes

- (b) Work out the range of Tom's times.

[1 mark]

Answer _____ minutes

- (c) For Mia's journeys, the mean is 27 minutes and the range is 9 minutes.

Tom says,

*"My journeys are quicker on average **and** more consistent than Mia's."*

Is Tom correct?

Give a reason for your answer.

[1 mark]

☐ Yes

☐ No

- 5 The table shows the numbers of goals scored by the Rovers in 12 matches.

Number of goals	0	1	2	3	4
Frequency	2	3	4	2	1

- (a) Work out the mean number of goals per match for the Rovers.

[2 marks]

Answer _____

- (b) For the United, the mean is 1.5 goals and the range is 5 goals.
Compare the goals scored by the two teams.
Write one comparison about the average and one about the spread.

[2 marks]

- 6 Two couriers, X and Y , each made 40 deliveries.
The table shows information about their delivery times.

	Median time (minutes)	Range of times (minutes)
Courier X	34	20
Courier Y	29	32

Tick **one** box for each statement.

[3 marks]

	True	May be true	Not true
Courier Y 's longest delivery took longer than Courier X 's longest delivery	☐	☐	☐
At least half of Courier Y 's deliveries took 29 minutes or less	☐	☐	☐
Courier X 's delivery times were more spread out	☐	☐	☐

- 7 The table shows the masses, m grams, of 30 apples from each of two orchards.

Mass, m (grams)	Orchard A	Orchard B
$100 < m \leq 120$	6	3
$120 < m \leq 140$	11	8
$140 < m \leq 160$	9	13
$160 < m \leq 180$	4	6

- (a) Write down the modal class for Orchard A.

[1 mark]

Answer _____

- (b) Which class interval contains the median for Orchard B?

[1 mark]

Answer _____

- (c) Jo says, “On average, the apples from Orchard B are heavier.”

Is Jo correct?

Give a reason for your answer.

[1 mark]

☐

Yes

☐

No
