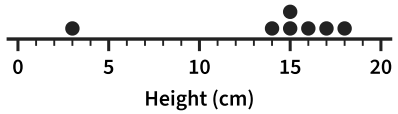
Choosing the Best Average

ANSWERS

1 The dot plot shows the heights of 7 seedlings. (a) Write down the outlier. (b) Which describes the heights better, the mean or the median?



(a) 3 cm

(b) the median

2 The numbers of emails 7 people got yesterday are

9, 12, 10, 11, 59, 8, 10

Find the mean and the median. Which describes the data better? Give a reason.

119 ÷ 7 = 17; 8, 9, 10, 10, 11, 12, 59

Answer: the median, 59 is an outlier

	Mean	Median
Emails	17	10

3 Six runners' times, in seconds, are

15, 13, 14, 16, 12, 14

Which average should you use to describe the times? Find it.

no outlier, so the mean: 84 ÷ 6 = 14

Answer: the mean, 14 seconds

4 Ring the best average to describe each set of data. Set (c) is the colours of 5 cars.

(a) 21, 23, 22, 25, 24 — (mean) median mode

(b) 5, 6, 4, 5, 33 — mean (median) mode

(c) silver, black, red, silver, white — mean median (mode)

5 Ten students were asked their favourite pet.

dog, cat, fish, dog, rabbit, cat, dog, hamster, dog, cat

Which average can you use for this data? Find it.

words: you can't add them or put them in order

Answer: the mode, dog

6 The table shows the minutes students in two classes spent on homework one night. Write two sentences to compare the classes.

	Mean	Range
Year 7	24	18
Year 8	21	10

Average: On average, Year 7 spent longer.

Range: Year 8 was more consistent.

7 Leah and Sam each did 5 quizzes, scored out of 10. Compare their scores. Use the mean and the range.

Leah: 7, 9, 8, 6, 10

Sam: 9, 4, 10, 3, 9

	Mean	Range
Leah	8	4
Sam	7	7

Average: On average, Leah scored higher.

Range: Leah was more consistent.

8 Kofi timed how long two laptops took to start up, in seconds. Ivy says, "Laptop B was more consistent, because its range is bigger." Explain her mistake, then write the correct sentence.

Laptop A: 22, 25, 24, 27, 21

Laptop B: 18, 30, 26, 15, 29

	Range
Laptop A	6
Laptop B	15

Why: a bigger range is more spread out

Correct: Laptop A was more consistent.

Choosing the Best Average *further practice*

ANSWERS

9 A shop sells hats in sizes 54 to 59. The sizes sold today are

56, 57, 56, 58, 55, 56, 57, 56, 59

(a) Which size should the shop order most of? (b) Why is the mean no use here?

(a) size 56, the mode

(b) it is 56.67, which is not a size

10 Jo and Mia each ran 100 m five times. Their times are in seconds. Compare their times. Use the mean and the range.

Jo: 14.2, 13.8, 14, 14.4, 13.6

Mia: 13.4, 14.6, 13.1, 14.5, 13.4

	Mean	Range
Jo	14	0.8
Mia	13.8	1.5

Average On average, Mia was faster.

Range Jo was more consistent.

11 The minutes two buses were late on 5 days are shown. Use a suitable average and the range to compare the buses.

Bus A: 1, 0, 2, 1, 25

Bus B: 4, 3, 5, 4, 6

25 is an outlier, so use the median

	Average	Range
Bus A	median 1	25
Bus B	median 4	3

Average On average, bus A was less late.

Range Bus B was more consistent.

12 Jade and Ruby each played 5 basketball games. Compare the points they scored. Use the mean and the range.

Jade: 12, 15, 11, 14, 13

Ruby: 8, 20, 10, 18, 9

	Mean	Range
Jade	13	4
Ruby	13	12

Average They scored the same on average.

Range Jade was more consistent.

13 The mean and the median of these six numbers are both 10.

8, 9, 10, 10, 11, 12

The number 45 is added. Find the new mean and the new median. Which average describes the data better now?

	Mean	Median
6 numbers	10	10
7 numbers	15	10

Answer the median, 45 is an outlier

14 A quiz team needs one more player who scores steadily. The table shows two players' scores in their last 10 quizzes. Who should the team pick? Explain.

	Mean	Range
Priya	18	15
Bea	16	4

Pick Bea

Why her range is smaller

15 Ben says, "The mean is always the best average, because it uses every value." Write down five numbers that show he is wrong. Explain.

Example 2, 3, 3, 4, 38

Why the mean is 10, but four numbers are under 5

16 Write down two sets of four numbers that have the same mean, where the first set is more consistent than the second.

both means 5.5; ranges 1 and 9

First 5, 5, 6, 6

Second 1, 3, 8, 10