2.7 Averages: 30-minute Pack

GL ASSESSMENT GL11PLUS-MATHS · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Priya wants her mean weekly saving over 6 weeks to be £14.50. In the first five weeks she saves £12, £15, £18, £9 and £16. How much must she save in week 6 to reach her target mean?

(3)

---

2 A coach travels 150 km in 3 hours for the first part of a journey, then a further 90 km in 2 hours. Calculate the average speed for the whole journey, in km/h.

(3)

---

3 Over 5 days, Tom reads pages of a book. On the first four days he reads 24, 31, 18 and 27 pages. If the mean number of pages read per day over the 5 days is 25, calculate how many pages he read on day 5.

(3)

© Revision Library | revisionlibrary.co.uk

4 Which of these is the median of the numbers 3, 8, 5, 12, 7, 9, 4?

- ☐ A) 5
- ☐ B) 7
- ☐ C) 8
- ☐ D) 9

---

5 A netball team scored the following number of goals in 6 matches: 9, 4, 15, 7, 11, 13. Find the median number of goals scored.

(2)

---

6 Five numbers have a mean of 8. Four of the numbers are 5, 9, 10 and 6. Work out the fifth number.

(3)

---

7 The table shows the number of brothers and sisters (siblings) for 10 children in a class. Number of siblings (x): 0, 1, 2, 3. Frequency (f): 2, 4, 3, 1.

(a) Write down the modal number of siblings. **(1)**

(b) Calculate the mean number of siblings per child. **(3)**

.....

© Revision Library | revisionlibrary.co.uk

8 Six pupils sat a test. Their scores out of 100 were: 42, 58, 65, 71, 39, 61.

(a) Calculate the mean test score. **(2)**

.....

(b) Calculate the range of the scores. **(2)**

.....

---

9 Show that the mean of 4, 9, 14, 19 and 24 is 14.

(2)

---

10 Here are the shoe sizes of 9 pupils in a class: 5, 6, 5, 7, 8, 5, 9, 6, 4. State the modal shoe size.

(1)

---

11 The mean of four numbers is (x + 7). The four numbers are x, x+3, 2x-1 and 4x+6. Form an equation and solve it to find the value of x.

(4)

© Revision Library | revisionlibrary.co.uk

12 A data set has the values 2, 2, 2, 5, 9. Which statement about this data set is true?

- ☐ A) mode > mean
- ☐ B) range = mean
- ☐ C) median = mode
- ☐ D) mean = median

---

13 A set of five whole numbers has mean 8, median 8, mode 6 and range 5. Find a set of five numbers that satisfies all four conditions.

(4)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 2.7 Averages: 30-minute Pack

Question 1

total needed over 6 weeks = 14.50 x 6 = £87 **M1**

sum of first five weeks' savings = £70 **M1**

week 6 saving = £17, cao **A1**

Answer: £17

Question 2

total distance = 150 + 90 = 240 km **M1**

total time = 3 + 2 = 5 hours **M1**

average speed = 48 km/h, cao (units required) **A1**

Answer: 48 km/h

Question 3

total pages needed over 5 days = 25 x 5 = 125 **M1**

sum of first four days = 24+31+18+27 = 100 **M1**

day 5 = 25 pages, cao **A1**

Answer: 25 pages

Question 4

B) 7, cao **B1**

Answer: B) 7

Question 5

numbers ordered correctly: 4, 7, 9, 11, 13, 15 and middle pair identified (9, 11) **M1**

median = 10 (oe), cao **A1**

Answer: 10

Question 6

total of all five numbers = 8 x 5 = 40 **M1**

sum of the four known numbers = 5 + 9 + 10 + 6 = 30 **M1**

fifth number = 40 - 30 = 10, cao **A1**

Answer: 10

Question 7

(a) mode = 1, cao **B1**

(a) Answer: 1

(b) correct values of fx: 0, 4, 6, 3 summed to give 13 **M1**

(b) divides total fx by total frequency (10) **M1**

(b) mean = 1.3 (oe 13/10), cao **A1**

(b) Answer: 1.3

Question 8

(a) sum of the six scores = 336 **M1**

(a) mean = 56, cao **A1**

(a) Answer: 56

(b) identifies highest (71) and lowest (39) scores **M1**

(b) range = 32, cao **A1**

(b) Answer: 32

Question 9

sum of the five numbers shown = 70 **M1**

cso: 70 / 5 = 14, answer printed correctly derived **A1**

Answer: 14 (shown)

Question 10

modal shoe size = 5 (cao) **B1**

Answer: 5

Question 11

sum of the four expressions = 8x + 8 (oe, unsimplified acceptable); accept an equivalent route to the same value without algebra, such as trial and improvement **M1**

forms the equation (8x+8)/4 = x+7, oe **M1**

correct simplification 2x+2 = x+7 and rearranges to isolate x **M1**

x = 5, cao **A1**

Answer: x = 5

Question 12

C) median = mode, cao **B1**

Answer: C) median = mode

Question 13

five whole numbers with a total of 40 (satisfying mean = 8) **B1**

middle value (when ordered) equal to 8 (satisfying median = 8) **B1**

value 6 appearing more often than any other value (satisfying mode = 6) **B1**

difference between highest and lowest value equal to 5 (satisfying range = 5); ft any other valid set meeting all four conditions **B1**

Answer: 6, 6, 8, 9, 11 (or any other valid set satisfying all four conditions)

© Revision Library | revisionlibrary.co.uk