6.5 Averages from Frequency Tables: 2-hour Pack

Calculators not allowed · about 120 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The table shows the number of pets for a group of people.
number of pets = 3: frequency 7; number of pets = 4: frequency 3; number of pets = 5: frequency 12; number of pets = 6: frequency 6.
Work out the range.

(2)

---

2 Here are 10 numbers: 19, 28, 8, 10, 18, 10, 5, 18, 9, 18.
Work out the mean, the median and the range.

(3)

---

3 Here are 10 numbers: 23, 16, 6, 22, 16, 27, 25, 23, 21, 16.
Work out the mean, the median and the range.

(3)

© Revision Library | revisionlibrary.co.uk

4 The numbers of pets owned by 18 pupils are: 6, 5, 5, 3, 2, 2, 4, 4, 4, 6, 3, 3, 6, 3, 3, 5, 6, 2.
Complete a frequency table to find how many pupils own 2 pets.

(2)

---

5 Here are 10 numbers: 9, 21, 14, 6, 26, 28, 8, 4, 11, 8.
Work out the mean, the median and the range.

(3)

---

6 The numbers of pets owned by 22 pupils are: 7, 4, 4, 7, 7, 8, 6, 7, 5, 6, 4, 8, 4, 4, 4, 4, 5, 5, 5, 7, 5, 7.
Complete a frequency table to find how many pupils own 4 pets.

(2)

---

7 The table shows the number of goals for a group of people.
number of goals = 0: frequency 6; number of goals = 1: frequency 3; number of goals = 2: frequency 2; number of goals = 3: frequency 2.
Work out the range.

(2)

© Revision Library | revisionlibrary.co.uk

8 The numbers of pets owned by 20 pupils are: 7, 4, 4, 7, 4, 6, 4, 7, 7, 6, 6, 6, 7, 5, 5, 8, 4, 8, 6, 5.
What fraction of the pupils own exactly 8 pets? Give your answer in its simplest form.

(3)

---

9 The numbers of pets owned by 16 pupils are: 7, 3, 7, 4, 3, 7, 4, 5, 6, 7, 3, 5, 3, 7, 7, 5.
Complete a frequency table to find how many pupils own 3 pets.

(2)

---

10 The table shows the number of goals for a group of people.
number of goals = 2: frequency 9; number of goals = 3: frequency 10; number of goals = 4: frequency 7; number of goals = 5: frequency 2; number of goals = 6: frequency 9.
Work out the median.

(3)

---

11 The numbers of pets owned by 22 pupils are: 4, 5, 3, 4, 5, 1, 5, 5, 2, 4, 2, 1, 2, 3, 5, 1, 4, 1, 1, 2, 1, 3.
Complete a frequency table to find how many pupils own 2 pets.

(2)

© Revision Library | revisionlibrary.co.uk

12 The table shows the number of books read for a group of people.
number of books read = 1: frequency 12; number of books read = 2: frequency 10; number of books read = 3: frequency 9; number of books read = 4: frequency 4; number of books read = 5: frequency 4.
Work out the median.

(3)

---

13 The table shows the number of books read for a group of people.
number of books read = 2: frequency 6; number of books read = 3: frequency 12; number of books read = 4: frequency 7; number of books read = 5: frequency 9; number of books read = 6: frequency 8.
Work out the median.

(3)

---

14 The numbers of pets owned by 17 pupils are: 5, 3, 5, 4, 4, 6, 7, 6, 6, 6, 6, 7, 6, 7, 7, 7, 5.
Complete a frequency table to find how many pupils own 5 pets.

(2)

---

15 The numbers of pets owned by 14 pupils are: 3, 4, 4, 3, 4, 3, 3, 1, 1, 3, 2, 1, 2, 2.
What fraction of the pupils own exactly 4 pets? Give your answer in its simplest form.

(2)

© Revision Library | revisionlibrary.co.uk

16 The numbers of pets owned by 18 pupils are: 6, 4, 2, 3, 5, 3, 5, 5, 4, 2, 3, 2, 3, 2, 2, 5, 5, 3.
Complete a frequency table to find how many pupils own 4 pets.

(2)

---

17 The numbers of pets owned by 20 pupils are: 4, 4, 2, 4, 5, 1, 1, 5, 3, 2, 5, 3, 2, 3, 2, 2, 1, 2, 3, 2.
What fraction of the pupils own exactly 3 pets? Give your answer in its simplest form.

(3)

---

18 The numbers of pets owned by 17 pupils are: 5, 7, 3, 7, 6, 5, 7, 4, 4, 6, 4, 5, 6, 6, 5, 4, 6.
Complete a frequency table to find how many pupils own 6 pets.

(2)

---

19 Here are 10 numbers: 3, 6, 18, 20, 5, 11, 11, 9, 19, 11.
Work out the mean, the median and the range.

(3)

© Revision Library | revisionlibrary.co.uk

20 The numbers of pets owned by 20 pupils are: 5, 5, 6, 6, 6, 7, 4, 7, 7, 5, 5, 5, 7, 6, 4, 7, 6, 7, 3, 6.
What fraction of the pupils own exactly 6 pets? Give your answer in its simplest form.

(3)

---

21 The table shows the number of books read for a group of people.
number of books read = 3: frequency 9; number of books read = 4: frequency 11; number of books read = 5: frequency 10; number of books read = 6: frequency 2.
Work out the range.

(2)

---

22 Here are 10 numbers: 15, 10, 18, 12, 4, 15, 14, 15, 11, 11.
Work out the mean, the median and the range.

(3)

---

23 The numbers of pets owned by 22 pupils are: 3, 3, 5, 2, 4, 3, 2, 2, 3, 2, 3, 3, 1, 3, 3, 3, 4, 4, 5, 2, 3, 4.
Complete a frequency table to find how many pupils own 1 pets.

(2)

© Revision Library | revisionlibrary.co.uk

24 The table shows the number of pets for a group of people.
number of pets = 1: frequency 9; number of pets = 2: frequency 11; number of pets = 3: frequency 4; number of pets = 4: frequency 2; number of pets = 5: frequency 6.
Work out the median.

(3)

---

25 The numbers of pets owned by 23 pupils are: 4, 5, 3, 3, 4, 2, 2, 3, 5, 4, 5, 2, 4, 4, 4, 3, 6, 6, 2, 3, 2, 3, 3.
Complete a frequency table to find how many pupils own 2 pets.

(2)

---

26 Here are 6 numbers: 14, 13, 19, 27, 6, 14.
Work out the mean, the median and the range.

(3)

---

27 The numbers of pets owned by 22 pupils are: 4, 6, 6, 5, 4, 4, 6, 6, 4, 6, 5, 5, 4, 4, 6, 8, 7, 5, 6, 8, 7, 5.
What fraction of the pupils own exactly 4 pets? Give your answer in its simplest form.

(3)

© Revision Library | revisionlibrary.co.uk

28 The numbers of pets owned by 14 pupils are: 7, 7, 5, 5, 5, 6, 8, 6, 7, 8, 4, 8, 8, 7.
What fraction of the pupils own exactly 5 pets? Give your answer in its simplest form.

(2)

---

29 The table shows how many pets pupils in a class have.
Number of pets: 0, 1, 2, 3
Frequency: 5, 8, 4, 3
Find the mean number of pets per pupil.

(3)

---

30 The table shows the number of pets for a group of people.
number of pets = 1: frequency 1; number of pets = 2: frequency 7; number of pets = 3: frequency 12; number of pets = 4: frequency 3.
Work out the range.

(2)

---

31 The table shows the number of books read for a group of people.
number of books read = 3: frequency 5; number of books read = 4: frequency 6; number of books read = 5: frequency 2; number of books read = 6: frequency 10; number of books read = 7: frequency 9.
Work out the median.

(3)

© Revision Library | revisionlibrary.co.uk

32 A frequency table lists shoe sizes of 12 pupils. Sizes 3,4,5,6 have frequencies 2,3,4,3. Find the median shoe size.

(2)

---

33 The mean of 4 numbers is 7. Three of the numbers are 5, 9 and 6. Find the fourth number.

(2)

---

34 A frequency table shows:
Value: 20, 21, 22, 23
Frequency: 3, 5, 4, 4
Find the median value.

(2)

---

35 A class of 20 pupils has a mean test score of 55. One pupil, who scored 30, leaves and is replaced by a new pupil who scores 60. Work out the new mean test score for the class.

(3)

© Revision Library | revisionlibrary.co.uk

36 A survey of 15 households records the number of cars owned.
Number of cars: 0, 1, 2, 3
Frequency: 3, 6, 4, 2
Find the median number of cars per household.

(3)

---

37 A frequency table shows the number of pets owned by pupils.
Number of pets: 0, 1, 2
Frequency: 4, 3, 3
Write down the mode.

(1)

---

38 Estimate the mean from this grouped frequency table.
Class intervals: 0-9, 10-19
Frequency: 5, 5

(2)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 6.5 Averages from Frequency Tables: 2-hour Pack

Question 1

6 - 3	M1
3 cao	A1

Answer: **3**

Question 2

mean 14.3	B1
median 14	B1
range 23	B1

Answer: **mean 14.3, median 14, range 23**

Question 3

mean 19.5	B1
median 21.5	B1
range 21	B1

Answer: **mean 19.5, median 21.5, range 21**

Question 4

systematic counting or a tally of the data	M1
3 cao	A1

Answer: **3**

Question 5

mean 13.5	B1
median 10	B1
range 24	B1

Answer: **mean 13.5, median 10, range 24**

Question 6

systematic counting or a tally of the data	M1
7 cao	A1

Answer: **7**

Question 7

3 - 0	M1
3 cao	A1

Answer: **3**

Question 8

frequency 2 found	M1
2/20	M1
1/10 cao	A1

Answer: **1/10**

Question 9

systematic counting or a tally of the data	M1
4 cao	A1

Answer: **4**

Question 10

37 values in total, median at position 19	M1
cumulative frequency used	M1
3 cao	A1

Answer: **3**

Question 11

systematic counting or a tally of the data	M1
4 cao	A1

Answer: **4**

Question 12

39 values in total, median at position 20	M1
cumulative frequency used	M1
2 cao	A1

Answer: **2**

Question 13

42 values in total, median at position 21.5	M1
cumulative frequency used	M1
4 cao	A1

Answer: **4**

Question 14

systematic counting or a tally of the data	M1
3 cao	A1

Answer: **3**

Question 15

frequency 3 found	M1
3/14 cao	A1

Answer: **3/14**

Question 16

systematic counting or a tally of the data	M1
2 cao	A1

Answer: **2**

Question 17

frequency 4 found	M1
4/20	M1
1/5 cao	A1

Answer: **1/5**

Question 18

systematic counting or a tally of the data	M1
5 cao	A1

Answer: **5**

Question 19

mean 11.3	B1
median 11	B1
range 17	B1

Answer: **mean 11.3, median 11, range 17**

Question 20

frequency 6 found	M1
6/20	M1
3/10 cao	A1

Answer: **3/10**

© Revision Library | revisionlibrary.co.uk

Question 21

6 - 3	M1
3 cao	A1

Answer: **3**

Question 22

mean 12.5	B1
median 13	B1
range 14	B1

Answer: **mean 12.5, median 13, range 14**

Question 23

systematic counting or a tally of the data	M1
1 cao	A1

Answer: **1**

Question 24

32 values in total, median at position 16.5	M1
cumulative frequency used	M1
2 cao	A1

Answer: **2**

Question 25

systematic counting or a tally of the data	M1
5 cao	A1

Answer: **5**

Question 26

mean 15.5	B1
median 14	B1
range 21	B1

Answer: **mean 15.5, median 14, range 21**

Question 27

frequency 6 found	M1
6/22	M1
3/11 cao	A1

Answer: **3/11**

Question 28

frequency 3 found	M1
3/14 cao	A1

Answer: **3/14**

Question 29

compute sum value*frequency: 0*5 + 1*8 + 2*4 + 3*3 = 0 + 8 + 8 + 9 = 25	M1
correct total frequency 5+8+4+3 = 20	M1
mean = 25/20 = 1.25 cao	A1

Answer: **1.25**

Question 30

4 - 1	M1
3 cao	A1

Answer: **3**

Question 31

32 values in total, median at position 16.5	M1
cumulative frequency used	M1
6 cao	A1

Answer: **6**

Question 32

cumulative frequencies give positions: total 12 so median is average of 6th and 7th values	M1
median = 5 cao	A1

Answer: **5**

Question 33

total for 4 numbers = 28 and sum of the three known numbers = 20	M1
fourth number = 8 cao	A1

Answer: **8**

Question 34

correct cumulative frequencies and locating the middle position(s)	M1
median = 21.5 cao	A1

Answer: **21.5**

Question 35

original total = 20 x 55 = 1100	M1
new total = 1100 - 30 + 60 = 1130	M1
new mean = 56.5 cao	A1

Answer: **56.5**

Question 36

correct cumulative frequencies shown	M1
identifies the median position as the 8th value out of 15	M1
median = 1 cao	A1

Answer: **1**

Question 37

mode = 0 cao	B1

Answer: **0**

Question 38

uses midpoints 4.5 and 14.5 multiplied by frequency	M1
mean = 9.5 cao	A1

Answer: **9.5**

© Revision Library | revisionlibrary.co.uk