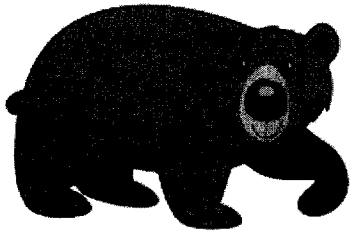


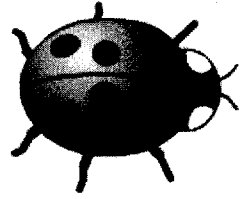
AVERAGES

| Page | Description |
|------|--|
| 1 | Collect the data then find the mode, median, mean and range. Odd number of pieces of data |
| 2 | Collect the data then find the mode, median, mean and range. Even number of pieces of data |
| 3 | Find mean, median, mode and range of ages of students in two schools. Compare the results |
| 4 | Find mean, median, mode and range of sets of data including a frequency table |
| 5 | Find mean, median, mode and range from a frequency table |
| 6 | Find mean, median, mode and range from a grouped frequency table |
| 7 | Averages review |



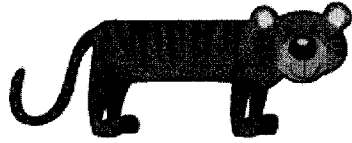
Animal

Legs



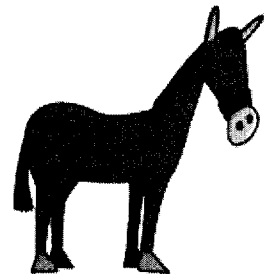
Animal

Legs



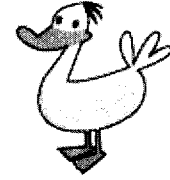
Animal

Legs



Animal

Legs



Animal

Legs

Mode

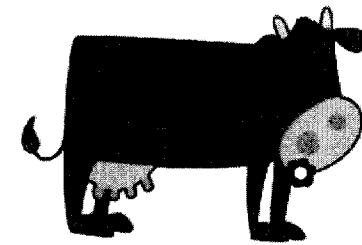
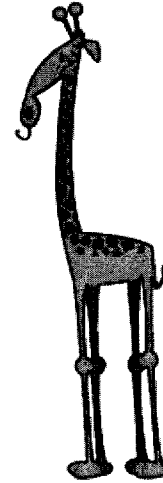
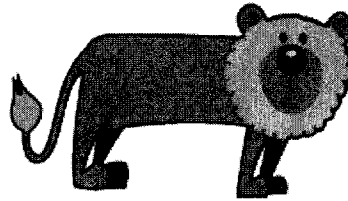
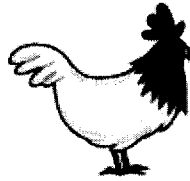
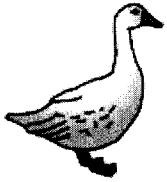
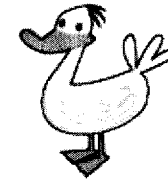
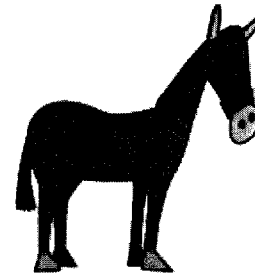
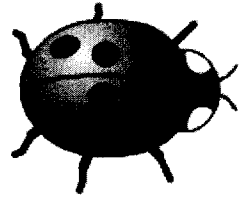
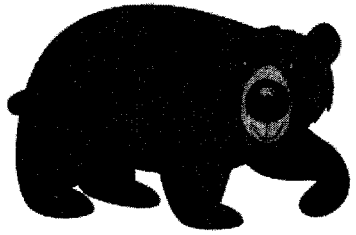
Median

Mean

Range



LEGS



The data

Write down the number of legs each animals has

Find

The mean

The mode

The median

The range

The data shows the age in years of a group of students and teachers within each school.

School A student total = 180 adult total = 187

students 7 7 7 8 8 8 9 9 10 10 10 10 11 11 11 11 11 11 11

teachers 24 29 34 42 58

School B student total = 250 adult total = 221

students 11 11 11 11 12 12 13 14 14 14 14 15 15 16 16 16 17 18

teachers 26 29 31 38 44 53

- 1) Which school is a Primary School?
- 2) Which school is a Secondary School?
- 3) What is the age of the youngest student in School A?
- 4) What is the range of ages of students in School A?
- 5) What is the range of ages of students in School B?
- 6) What is the median age of the teachers in School A?
- 7) What is the median age of the teachers in School B?
- 8) Which school has the oldest teacher?
- 9) What is the median age of the group from School A?
- 10) What is the median age of the group from School B?
- 11) What is the age of the youngest teacher in School B?
- 12) Calculate the mean age of the students

| | | Mean | Mode | Median | Range |
|----------|-------------|------|------|--------|-------|
| School A | students | | | | |
| | teachers | | | | |
| | whole group | | | | |

| | | Mean | Mode | Median | Range |
|----------|-------------|------|------|--------|-------|
| School B | students | | | | |
| | teachers | | | | |
| | whole group | | | | |

Mean, Median, Mode and Range

Find the mean, median, mode and range of these sets of numbers.

1) 4 6 8 8 10

2) 3 2 1 3 3

3) 7 6 7 2 3 1 9

4) 6 6 9

5) 5 6 5 4

6) 6 7 7 7 2 1

7) This table shows how many TVs people have in their homes. Find the mean, median, mode and range from this table.

| Number of TVs | Frequency |
|---------------|-----------|
| 1 | 3 |
| 2 | 4 |
| 3 | 2 |
| 4 | 1 |

8) Sally took 5 tests. She scored 45%, 23%, 87%, 62% and 74%.

a) Find the range of Sally's marks.

b) Find her median mark.

c) Find her mean mark.

9) Brian took 4 tests. He scored 63%, 58%, 71% and 42%.

a) Find the range of Brian's marks.

b) Find his median mark.

c) Find his mean mark.

10) Use your answers to questions 8 and 9 to answer these questions.

a) Who did better in the tests Brian or Sally?

b) What do their ranges tell you about their test marks?

Averages from a frequency table

1)

| Pens | Frequency | P x F | frequency running total |
|------|-----------|-------|-------------------------|
| 0 | 4 | | |
| 1 | 6 | | |
| 2 | 7 | | |
| 3 | 5 | | |
| 4 | 2 | | |
| 5 | 1 | | |
| | | | |

Find the mean

Find the mode

How many pieces of data $(\text{number of pieces data} + 1) \div 2 =$

Find the median

Find the range

2)

| Goals | Frequency | G x F | frequency running total |
|-------|-----------|-------|-------------------------|
| 0 | 7 | | |
| 1 | 5 | | |
| 2 | 3 | | |
| 3 | 6 | | |
| 4 | 2 | | |
| 5 | 1 | | |
| 6 | 1 | | |
| | | | |

Find the mean

Find the mode

How many pieces of data $(\text{number of pieces data} + 1) \div 2 =$

Find the median

Find the range

A survey of the length of leaves in a garden

| length of leaf in cm | Frequency | midpoint | frequency x midpoint | frequency running total |
|----------------------|-----------|----------|----------------------------|-------------------------------|
| $0 \leq L < 5$ | | | | |
| $5 \leq L < 10$ | | | | |
| $10 \leq L < 15$ | | | | |
| $15 \leq L < 20$ | | | | |
| $20 \leq L < 25$ | | | | |

in a garden was collected. The measurements are in cm

14.2 11.8 21.2 24.0 8.6 6.2 5.7 5.6 5.0 13.9 1.2
10.9 19.0 20.0 4.6 2.6 23.0 1.5 10.0 22.3 11.0 18.4

Complete the frequency section of the table

What is the modal group?

Find an estimate of the mean

Which group contains the median?

Averages review

A set of numbers

2, 7, 8, 7, 3

mean
median
mode
range

2, 5, 5, 3, 5, 4

mean
median
mode
range

A frequency table

| pets | frequency | |
|------|-----------|--|
| 0 | 3 | |
| 1 | 6 | |
| 2 | 5 | |
| 3 | 3 | |
| 4 | 1 | |

mean
median
mode
range

A grouped frequency table

| height | frequency | | |
|------------------|-----------|--|--|
| $0 \leq h < 10$ | 4 | | |
| $10 \leq h < 20$ | 7 | | |
| $20 \leq h < 30$ | 6 | | |
| $30 \leq h < 40$ | 2 | | |
| $40 \leq h < 50$ | 1 | | |

estimate of the mean
modal group
group containing the median

Adding an extra piece of data

John has taken 4 tests, his mean score so far is 7 out of 10. In his 5th test he scored 2 out of 10. What is his mean score now?

Is the answer sensible?

| TVs | Frequency |
|-----|-----------|
| 1 | 2 |
| 2 | 5 |
| 3 | 2 |

This survey shows the number of TVs per house.
Sally calculated that the mean number of TVs per house is 6.

Is this sensible?

Is it sensible to use the mean?

These are the ages of a group of students and their teacher. 11, 12, 11, 12, 11, 12, 12, 11, 12, 45
Is the mean a good average to use (explain your answer)?
Which average would be better in this example?

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