

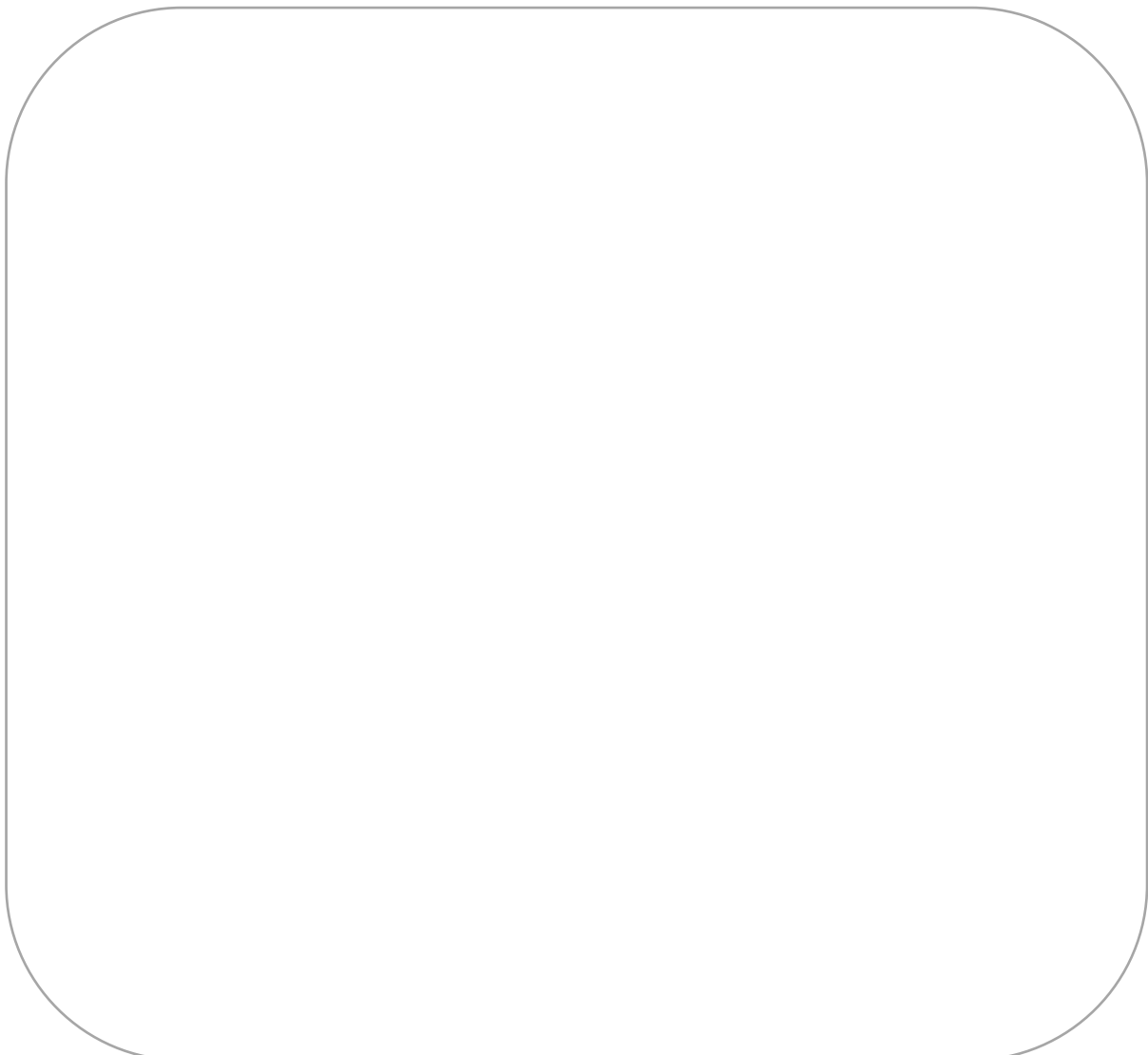
Week 11 Lesson 1 - Averages

- 1) Robbie played twenty football matches for his school team. The number of goals scored in each game are shown in the table.

| Goals | Number of matches |  |
|-------|-------------------|--|
| 0     | 3                 |  |
| 1     | 5                 |  |
| 2     | 9                 |  |
| 3     | 1                 |  |
| 4     | 2                 |  |

Calculate the mean number of goals scored per game.

(3)



Week 11 Lesson 1 - Averages

- 2) Lily visits an arcade while on holiday in Weston-Super-Mare.  
She plays 100 games and wins tickets that she can exchange for prizes.

The table below shows the results.

| Number of tickets won | Frequency |
|-----------------------|-----------|
| 0                     | 2         |
| 1                     | 11        |
| 2                     | 28        |
| 3                     | 18        |
| 4                     | 11        |
| 5                     | 15        |
| 6                     | 19        |
| 7                     | 2         |
| 8                     | 3         |

- a) Work out the total of tickets won. (2)

- b) Calculate the mean number of tickers per game. (2)

Week 11 Lesson 1 - Averages

- 3) An internet company collected data about the number of internet devices in each of 50 households.

The table shows the results.

| Number of devices | Number of households |
|-------------------|----------------------|
| 0                 | 1                    |
| 1                 | 1                    |
| 2                 | 2                    |
| 3                 | 4                    |
| 4                 | 9                    |
| 5                 | 13                   |
| 6                 | 10                   |
| 7                 | 7                    |
| 8                 | 3                    |

- a) Work out the total number of internet devices in these 50 households  
(2)

- b) Calculate the mean number of internet devices per household.

(2)

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4) Alex works for the council. He records the number of people in cars travelling down a street over one hour.

Here are his results.

| Number of people in each car | Number of cars |
|------------------------------|----------------|
| 1                            | 41             |
| 2                            | 54             |
| 3                            | 32             |
| 4                            | 20             |
| 5                            | 3              |

a) Work out the total number of cars that travelled down the street.

(1)

b) Work out the total number of people that travelled in cars down the street.

(2)

c) Work out the mean number of people travelling in each car.

(2)

Week 11 Lesson 1 - Averages

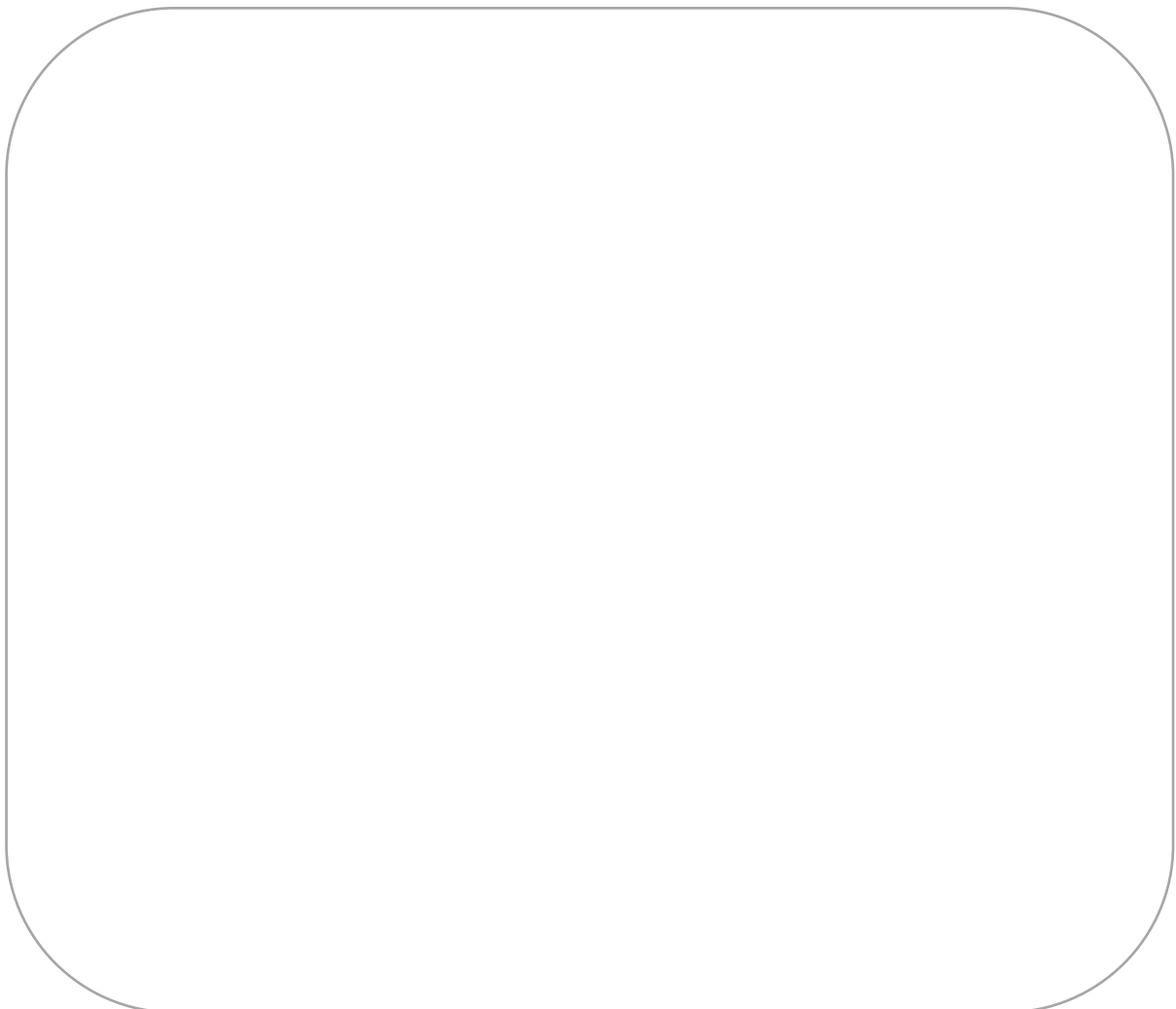
- 5) Simon rolls a fair six-sided dice 30 times. He records the results in a table however, misses two of the frequencies.

| Number | Frequency |
|--------|-----------|
| 1      | 6         |
| 2      | 3         |
| 3      | 5         |
| 4      |           |
| 5      |           |
| 6      | 6         |

The mean result is 3.5.

Work out the two missing numbers.

(4)



Week 11 Lesson 1 - Averages

6) The table below shows the length of 100 fish from a local river.

| Length, $L$ , cm | Frequency | Midpoint |  |
|------------------|-----------|----------|--|
| $0 < L \leq 10$  | 21        |          |  |
| $10 < L \leq 20$ | 11        |          |  |
| $20 < L \leq 30$ | 31        |          |  |
| $30 < L \leq 40$ | 12        |          |  |
| $40 < L \leq 50$ | 25        |          |  |

Calculate an estimate of the mean length of the fish.

(4)



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7) The table shows the heights of 50 students.

| Height, $h$ , cm   | Frequency |  |  |
|--------------------|-----------|--|--|
| $110 < h \leq 120$ | 3         |  |  |
| $120 < h \leq 130$ | 8         |  |  |
| $130 < h \leq 140$ | 9         |  |  |
| $140 < h \leq 150$ | 23        |  |  |
| $150 < h \leq 160$ | 7         |  |  |

a) Write down the modal class interval.

(1)

b) Work out an estimate for the mean height of the students.  
Don't forget your units.

(4)

Week 11 Lesson 1 - Averages

8) James recorded the times, in minutes, for 20 students to complete a test. The information about these times is shown in the table.

| Time (t minutes) | Frequency |  |  |
|------------------|-----------|--|--|
| $0 < t \leq 4$   | 4         |  |  |
| $4 < t \leq 8$   | 11        |  |  |
| $8 < t \leq 12$  | 4         |  |  |
| $12 < t \leq 16$ | 1         |  |  |

a) Write down the modal class interval.

(1)

b) Work out an estimate for the mean time taken.

(4)



Week 11 Lesson 1 - Averages

9) The time for ten students to complete a race is below.

| Time (t seconds) | Frequency |
|------------------|-----------|
| $20 < t \leq 40$ | 4         |
| $40 < t \leq 60$ | 5         |
| $60 < t \leq 80$ | 2         |

a) Work out what fraction of students took over one minute.

(1)

b) Write down the modal interval

(1)

c) Work out an estimate for the mean time taken.

(4)

.....Seconds