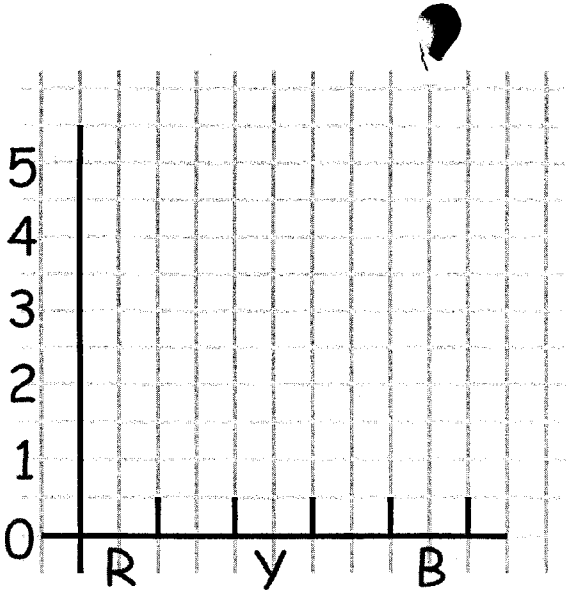
STATISTICAL DIAGRAMS

# Favourite Colours

## Favourite Colour

| Colour | Tally | Total |
|---|---|---|
| Red | 𝍸 | |
| Yellow | 𝍸 | |
| Blue | 𝍸 | |



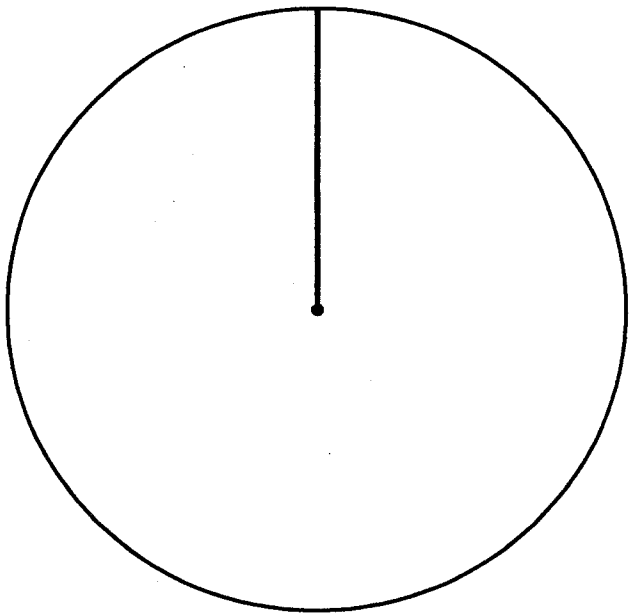

Bar Chart

## Pictogram

| Colour | |
|---|---|
| Red | |
| Yellow | |
| Blue | |

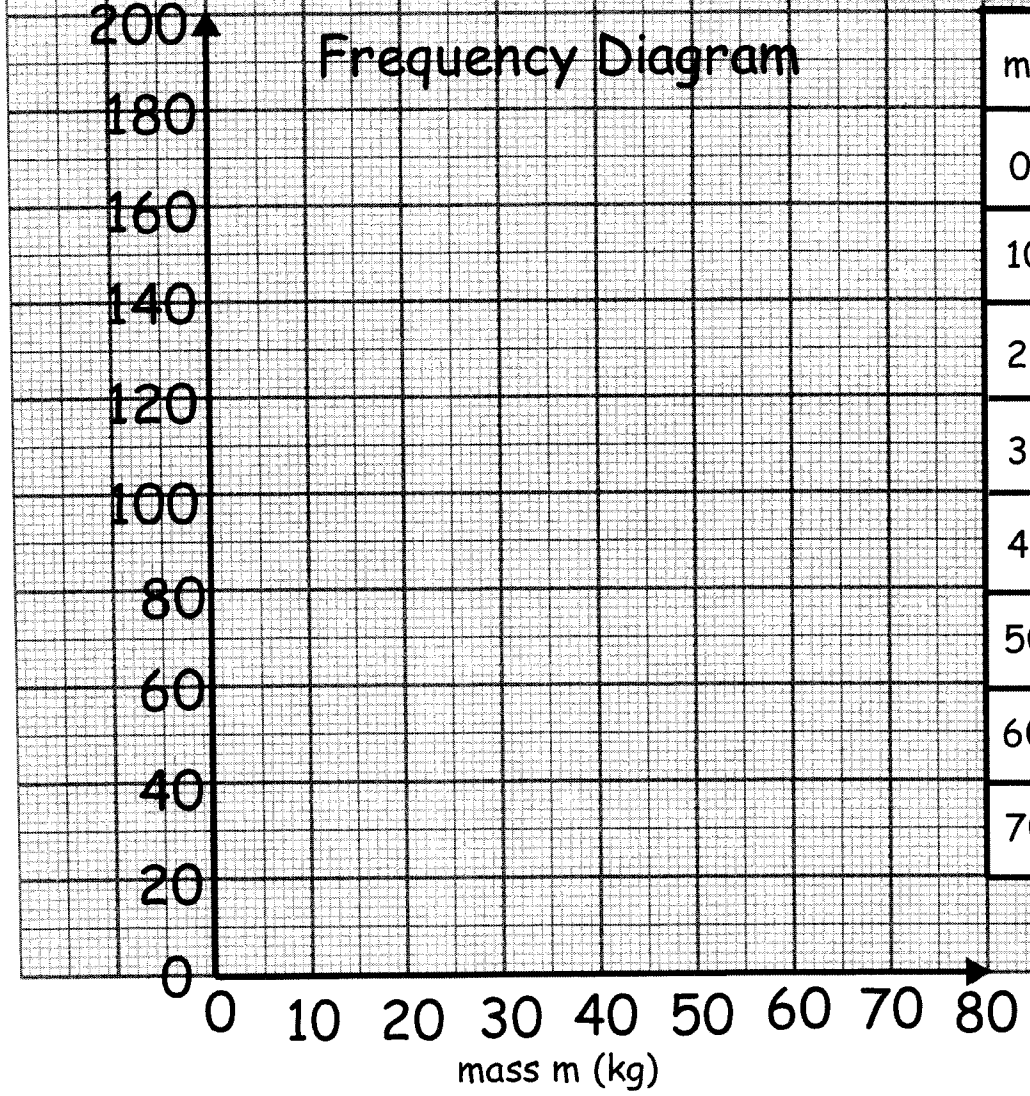
● represents 2

## Pie Chart



## Frequency Diagram

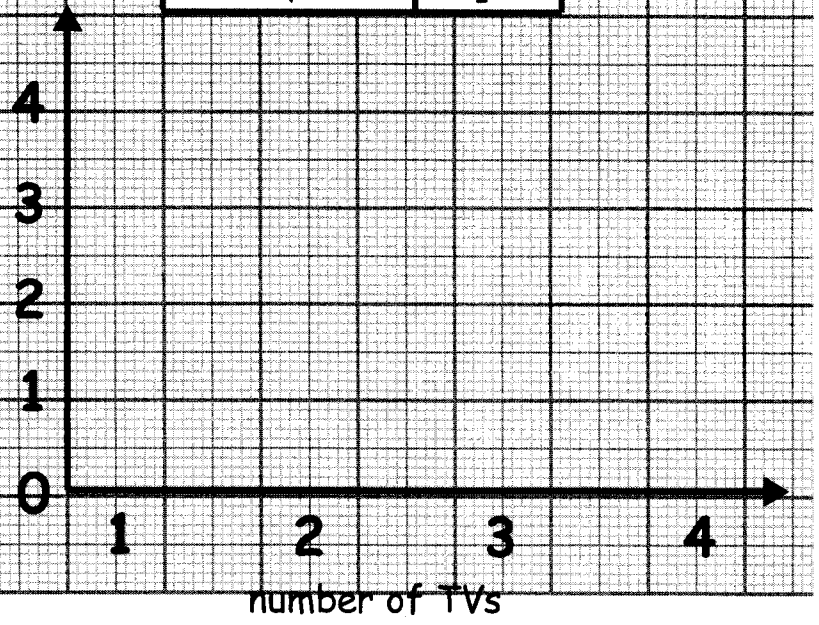
| mass m (kg) | frequency |
|---|---|
| $0 \leq m < 10$ | 20 |
| $10 \leq m < 20$ | 80 |
| $20 \leq m < 30$ | 100 |
| $30 \leq m < 40$ | 160 |
| $40 \leq m < 50$ | 200 |
| $50 \leq m < 60$ | 140 |
| $60 \leq m < 70$ | 60 |
| $70 \leq m < 80$ | 40 |




Draw a frequency diagram for this information on mass of a group of people.

## Bar Chart

| number of TVs | frequency |
|---|---|
| 1 | 3 |
| 2 | 4 |
| 3 | 2 |
| 4 | 1 |

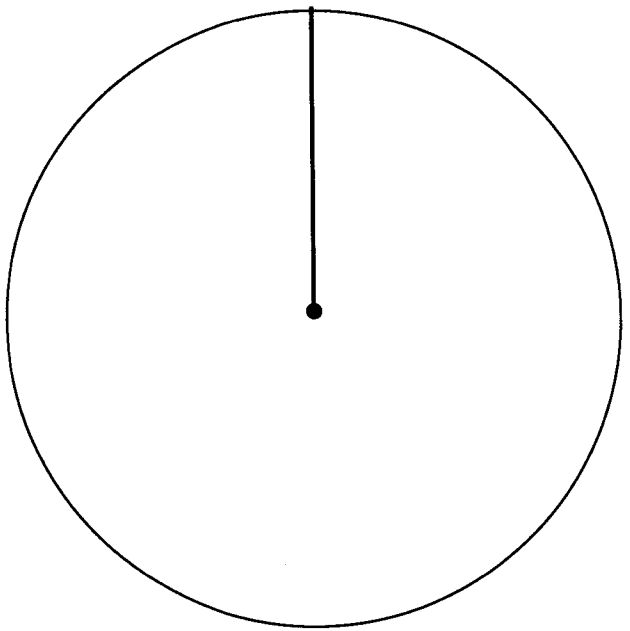



Draw a bar chart for this information on number of TVs per household.

## Tally Chart of favourite drinks in Year 7

| Drink | Tally | Total |
|---|---|---|
| Coke | \|\|\|\| | 4 |
| Fanta | \|\| | 2 |
| Lilt | \| | 1 |
| Tango | \| | 1 |
| | Total | |

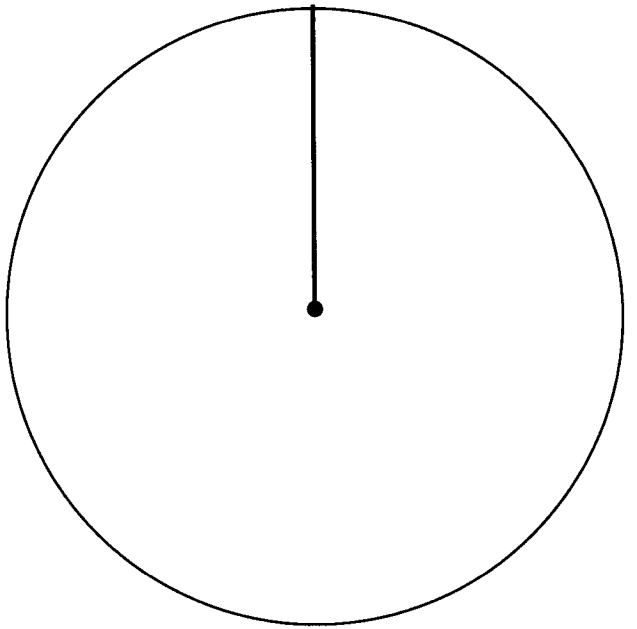
Angle per vote is 360 ÷



## Tally Chart of favourite pet in Year 7

| Drink | Tally | Total |
|---|---|---|
| Dog | \|\|\|\| | 3 |
| Cat | \|\| | 2 |
| Fish | \| | 3 |
| Rabbit | \| | 1 |
| | Total | |

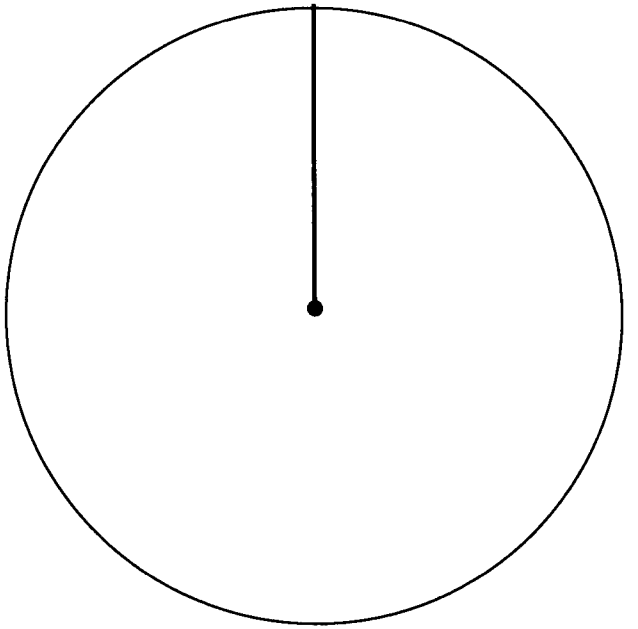
Angle per vote is 360 ÷



## Tally Chart of favourite Channel in Year

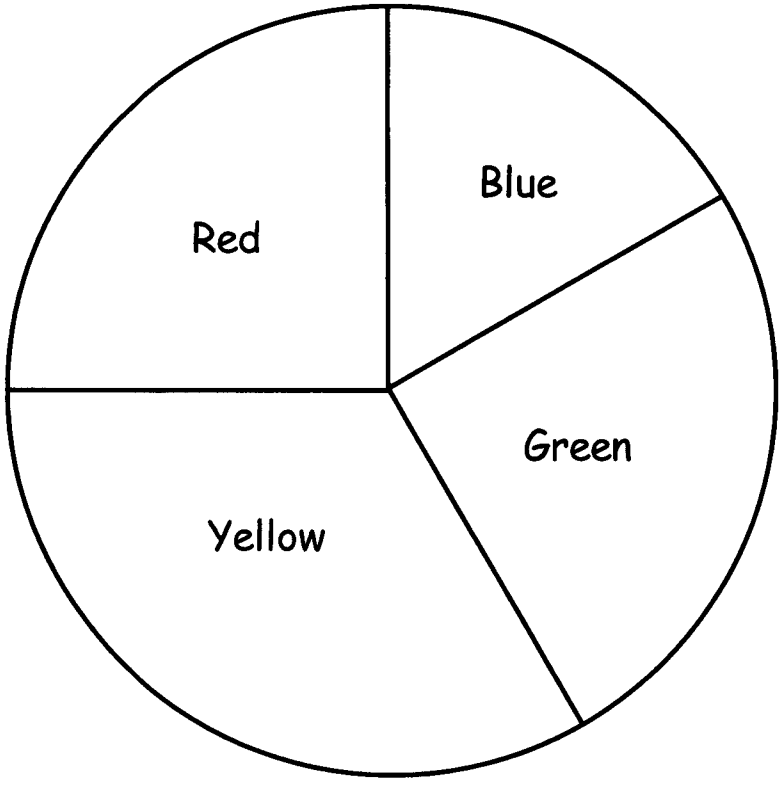
| Drink | Tally | Total |
|---|---|---|
| BBC 1 | \|\|\|\| | 5 |
| BBC 2 | \|\| | 2 |
| ITV | \| | 4 |
| C4 | \| | 1 |
| | Total | |

Angle per vote is 360 ÷



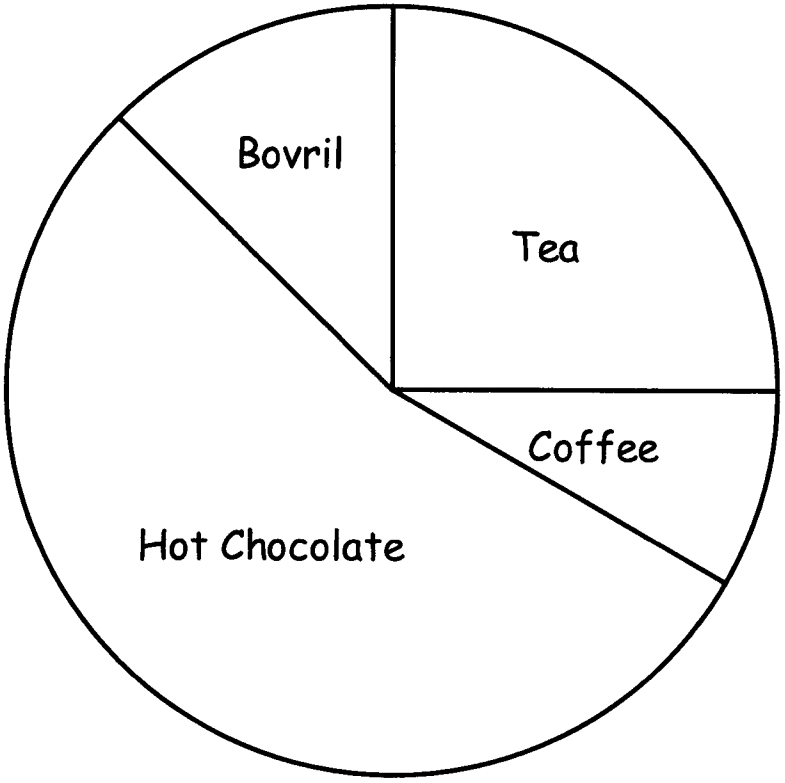
# Interpreting a Pie Chart

60 people were asked about their favourite colour.




| Colour | Angle | Frequency |
|---|---|---|
| Blue | | Angle ÷ 360 x 60 = |
| Green | | |
| Yellow | | |
| Red | | |

72 people were asked about their favourite hot drink.




| Drink | Angle | Frequency |
|---|---|---|
| Tea | | Angle ÷ 360 x 72 = |
| Coffee | | |
| H. C. | | |
| Bovril | | |

Scatter graphs

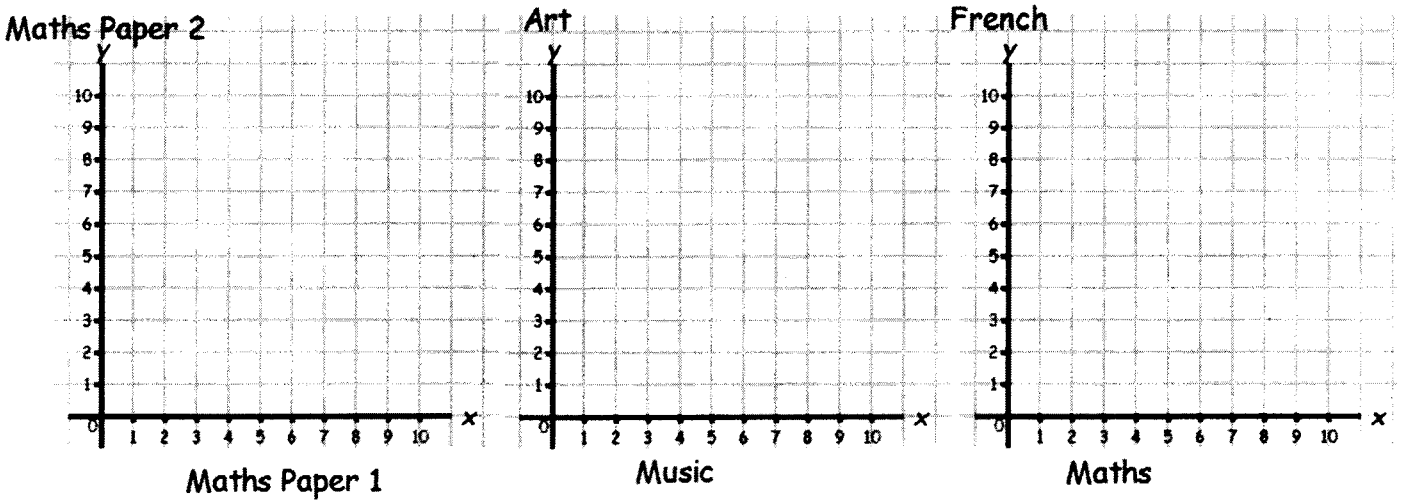
Plot the points from each table on the axes below

Test scores out of 10.

| Maths Paper 1 | Maths Paper 2 |
|---|---|
| 1 | 2 |
| 2 | 3 |
| 4 | 2 |
| 5 | 3 |
| 5 | 5 |
| 6 | 4 |
| 7 | 6 |
| 8 | 3 |
| 9 | 7 |
| 10 | 6 |

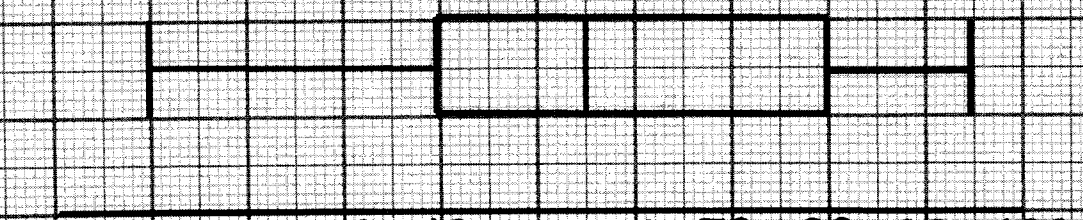
| Music | Art |
|---|---|
| 1 | 9 |
| 2 | 7 |
| 2 | 8 |
| 4 | 6 |
| 4 | 7 |
| 5 | 5 |
| 6 | 5 |
| 7 | 4 |
| 8 | 3 |
| 10 | 1 |

| Maths | French |
|---|---|
| 1 | 5 |
| 2 | 3 |
| 2 | 8 |
| 5 | 1 |
| 5 | 5 |
| 5 | 8 |
| 6 | 7 |
| 8 | 1 |
| 8 | 6 |
| 9 | 4 |




For each scatter graph describe the correlation and where possible draw a line of best fit.

# Box Plots




Using this box plot, fill in these values

min

max

LQ

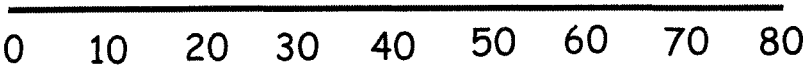
UQ

Median

Draw box plots for tests 1 and 2 on the scale below

Test 1

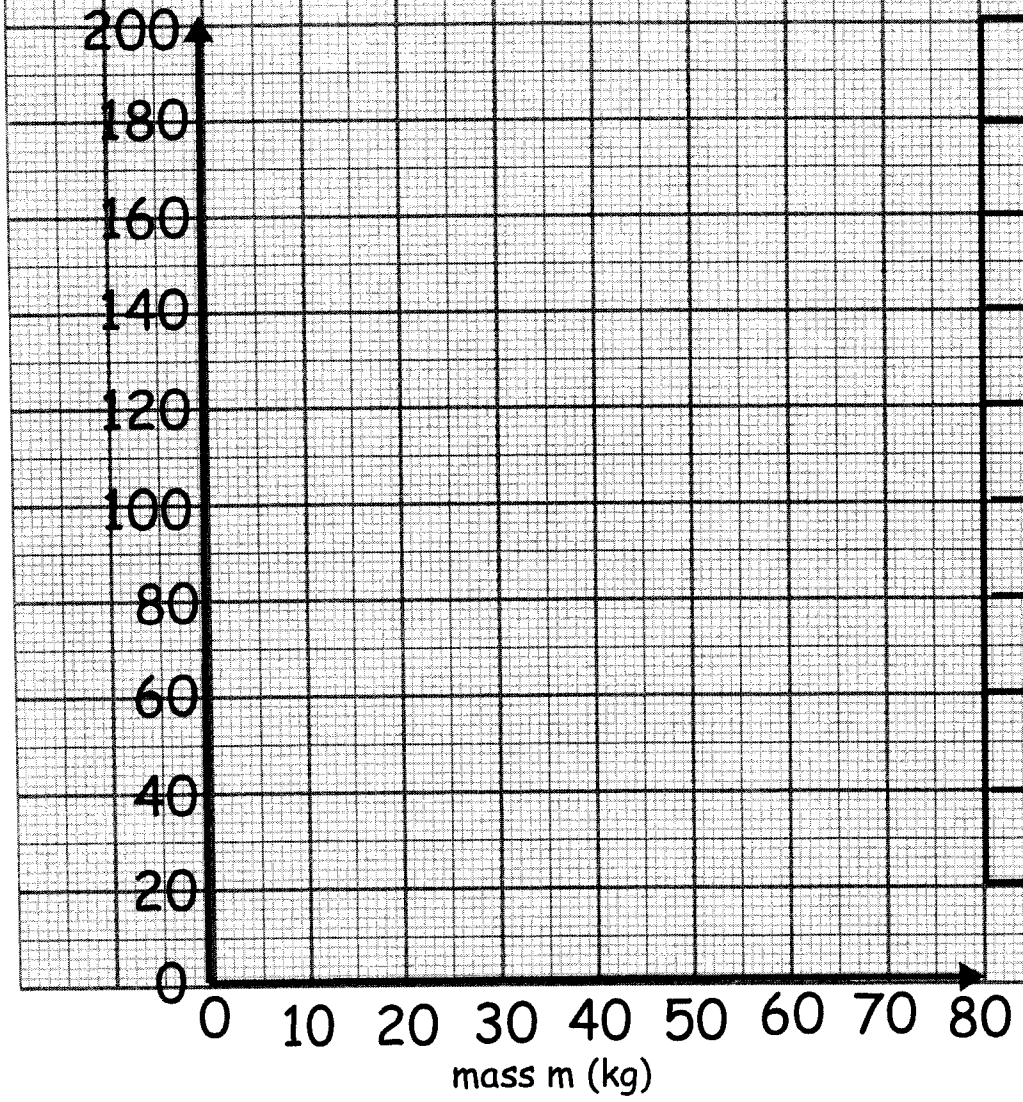
Test 2




| | Test 1 | Test 2 |
|---|---|---|
| min | 7 | 13 |
| max | 56 | 73 |
| LQ | 12 | 20 |
| UQ | 30 | 50 |
| Median | 22 | 40 |

Compare the results from the two tests

Cumulative frequency graph of a survey of the birth mass of 200 animals



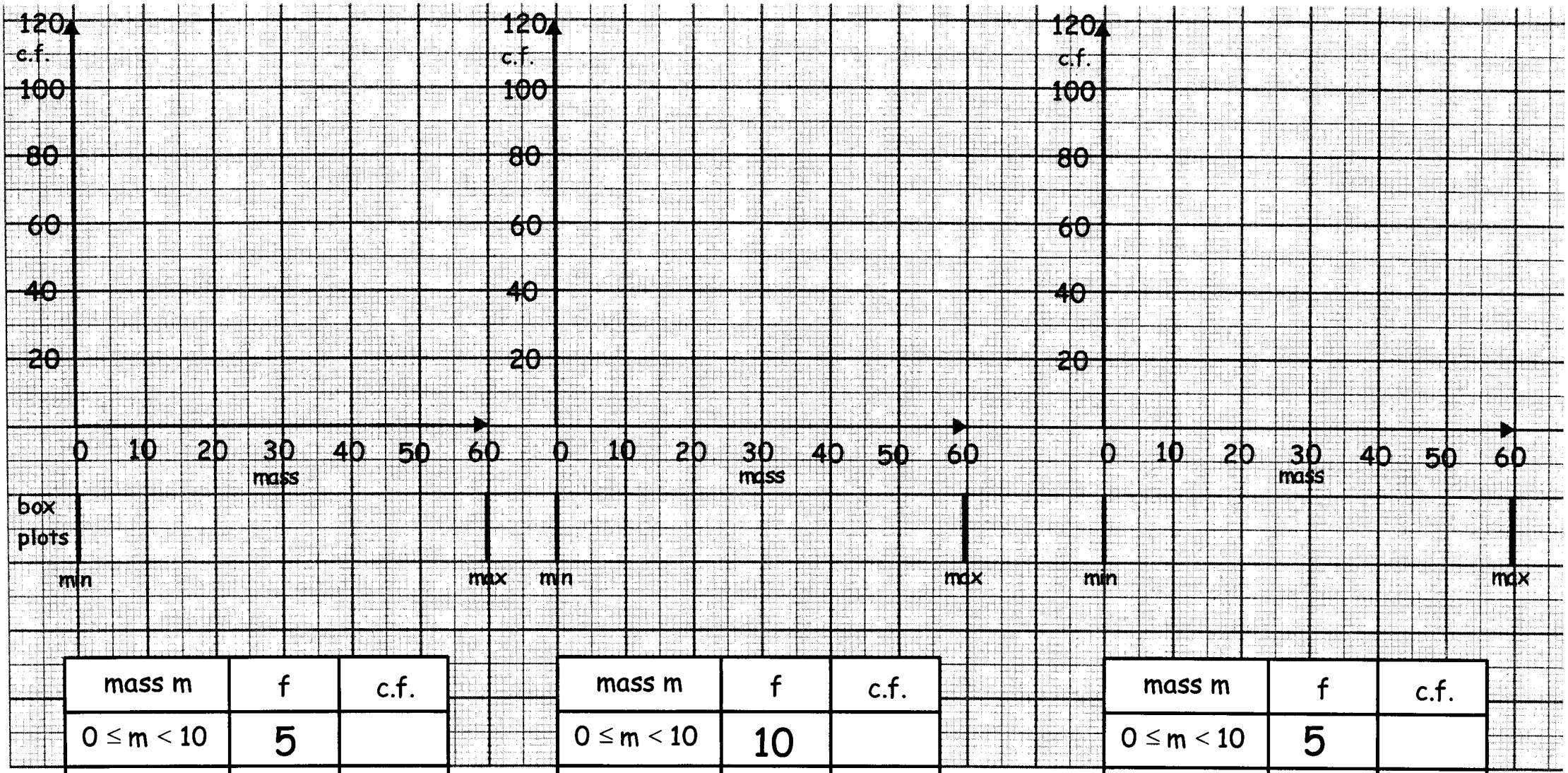

| mass m (kg) | frequency | cumulative frequency | point to plot |
|---|---|---|---|
| $0 \leq m < 10$ | 10 | | |
| $10 \leq m < 20$ | 20 | | |
| $20 \leq m < 30$ | 30 | | |
| $30 \leq m < 40$ | 50 | | |
| $40 \leq m < 50$ | 40 | | |
| $50 \leq m < 60$ | 20 | | |
| $60 \leq m < 70$ | 20 | | |
| $70 \leq m < 80$ | 10 | | |

Median 50%, 50% of 200 = _____, the median is

Lower Quartile 25%, 25% of 200 = _____, the Lower Quartile is

Upper Quartile 75%, 75% of 200 = _____, the Upper Quartile is

Inter-quartile range = Upper Quartile - Lower Quartile =









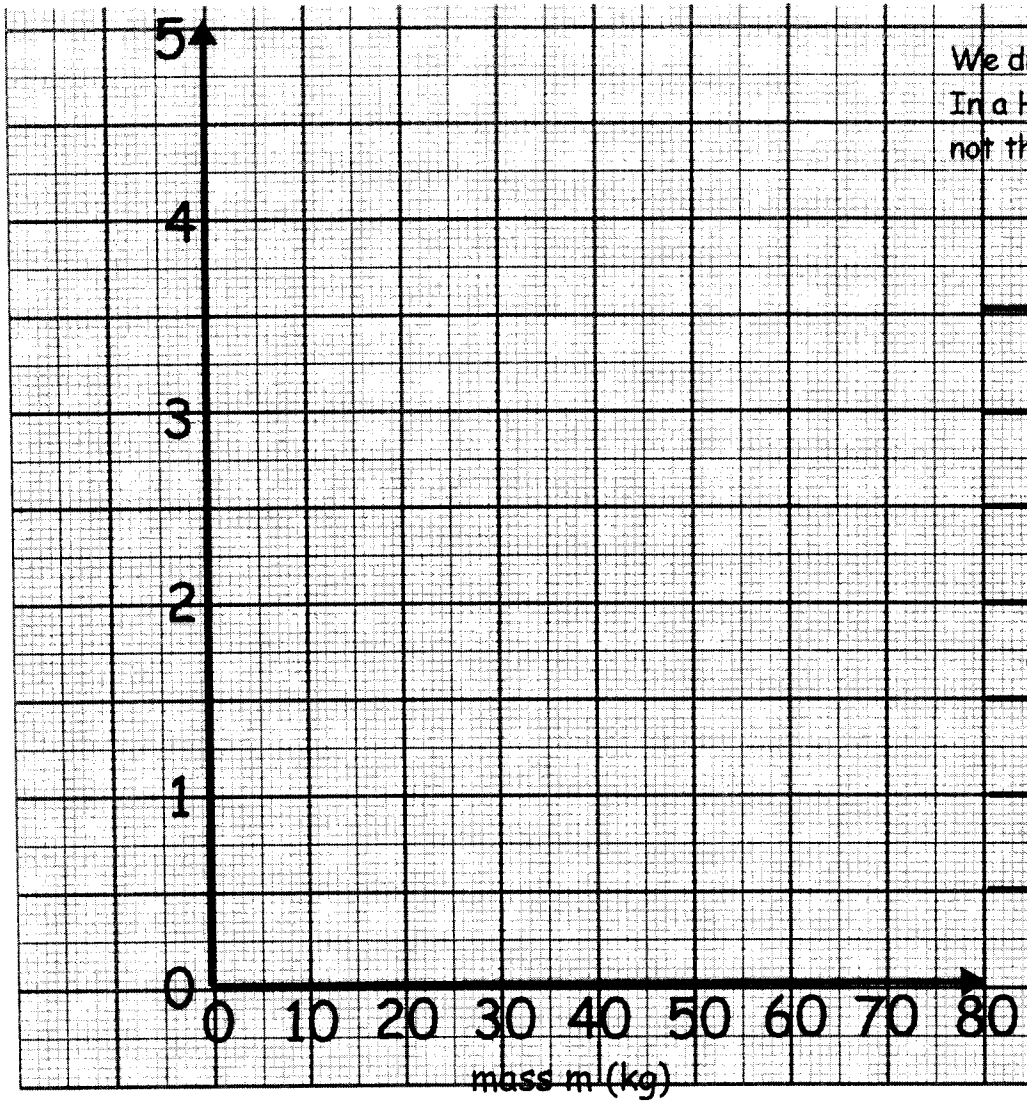

| mass m | f | c.f. |
|---|---|---|
| $0 \le m < 10$ | 5 | |
| $10 \le m < 20$ | 10 | |
| $20 \le m < 30$ | 45 | |
| $30 \le m < 40$ | 45 | |
| $40 \le m < 50$ | 10 | |
| $50 \le m < 60$ | 5 | |

| mass m | f | c.f. |
|---|---|---|
| $0 \le m < 10$ | 10 | |
| $10 \le m < 20$ | 80 | |
| $20 \le m < 30$ | 10 | |
| $30 \le m < 40$ | 10 | |
| $40 \le m < 50$ | 5 | |
| $50 \le m < 60$ | 5 | |

| mass m | f | c.f. |
|---|---|---|
| $0 \le m < 10$ | 5 | |
| $10 \le m < 20$ | 5 | |
| $20 \le m < 30$ | 10 | |
| $30 \le m < 40$ | 10 | |
| $40 \le m < 50$ | 80 | |
| $50 \le m < 60$ | 10 | |

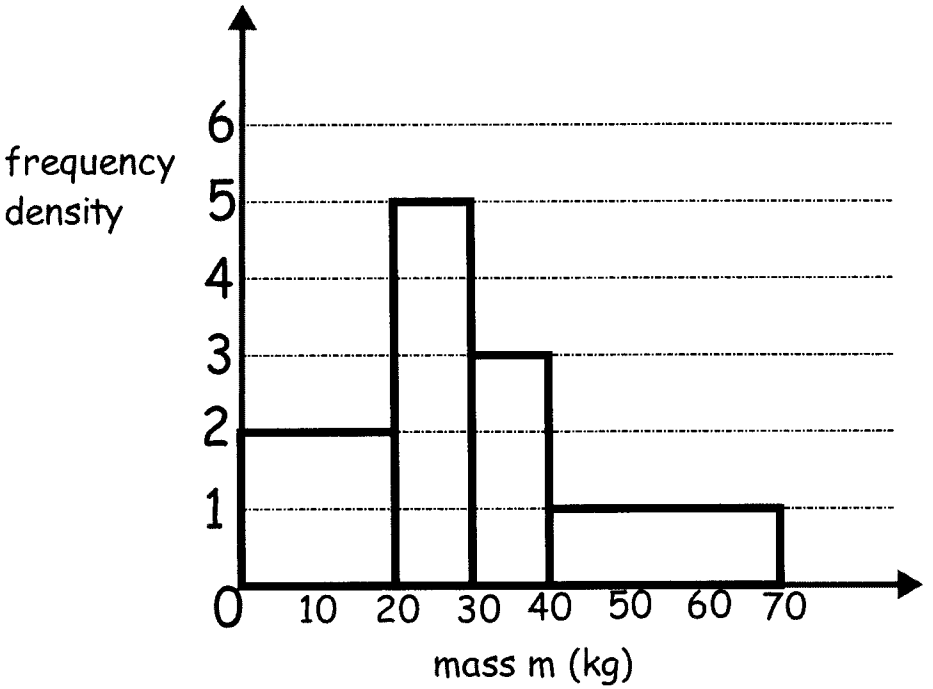
We draw a histogram if the groups are of unequal width.
In a HISTOGRAM the area of the bar represents the frequency
not the height of the bar.

| mass m (kg) | frequency | class width | frequency density = frequency ÷ class width |
|---|---|---|---|
| $0 \leq m < 10$ | 10 | | |
| $10 \leq m < 15$ | 20 | | |
| $15 \leq m < 20$ | 25 | | |
| $20 \leq m < 30$ | 40 | | |
| $30 \leq m < 50$ | 30 | | |
| $50 \leq m < 80$ | 15 | | |



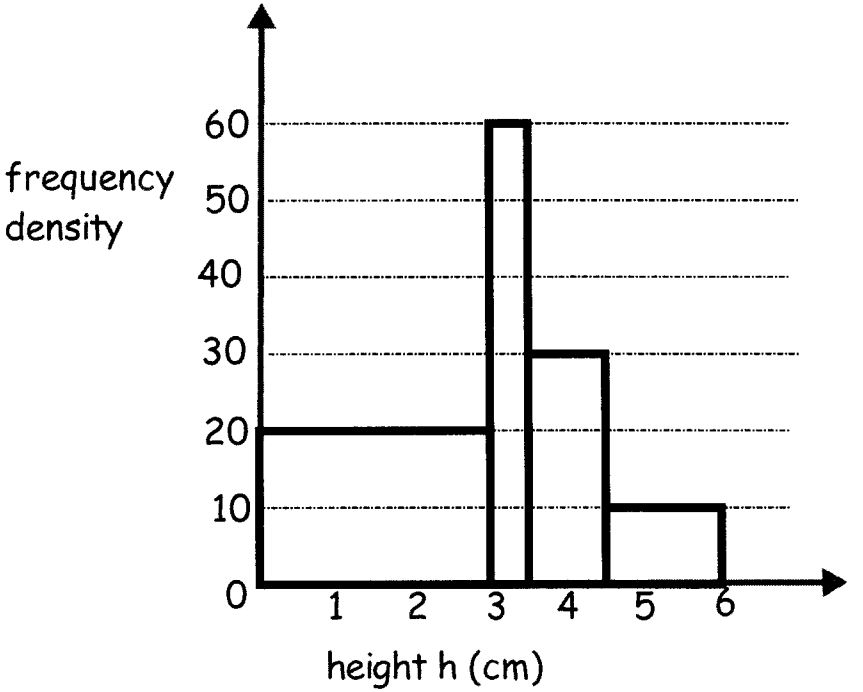

A frequency polygon can be drawn by joining the midpoints of the tops of the bars with straight lines

Fill in the table using the histogram




| mass m (kg) | class width | frequency density | frequency |
|---|---|---|---|
| $0 \leq m < 20$ | | | |
| $20 \leq m < 30$ | | | |
| $30 \leq m < 40$ | | | |
| $40 \leq m < 70$ | | | |

Fill in the table using the histogram




| height h (cm) | class width | frequency density | frequency |
|---|---|---|---|
| $0 \leq h < 3$ | | | |
| $3 \leq h < 3.5$ | | | |
| $3.5 \leq h < 4.5$ | | | |
| $4.5 \leq h < 6$ | | | |