# Topic Test 1 (20 minutes)
## Statistical measures - Higher

**1**    Decide in each case whether you would use primary or secondary data to investigate these hypotheses.

**[1 mark]**

The coldest month of the year is December.

Answer _____

The reaction times of girls are better than that of boys.

Answer _____

**2**    Circle the best way to show the following data.

**2 (a)**    The hours of sunshine in a town for a week.

**[1 mark]**

Bar chart                               Scatter diagram

Cumulative frequency diagram            Histogram

**2 (b)**    The sales of umbrellas and the amount of rainfall.

**[1 mark]**

Bar chart                               Scatter diagram

Cumulative frequency diagram            Histogram

**3**    Here is a table of weekly wages in a small kitchen fitting company

| Job | Number of employees | Weekly wage |
|---|---|---|
| Labourers | 5 | £240 |
| Driver | 1 | £300 |
| Foreman | 1 | £340 |
| Designers | 2 | £500 |
| Owner | 1 | £1500 |
| Total | 10 | |

**3 (a)**    Work out the median weekly wage.

[1 mark]

Answer £ _____

**3 (b)**    Give a reason why the mean would not be a good measure for the average wage in the company.

[1 mark]

_____

_____

_____

AQA Education (AQA) is a registered charity (number 1073334) and a company limited by guarantee registered England and Wales (number 3644723). Our registered address is AQA, Devas Street, Manchester M15 6EX.

2 of 7

**4**     Roxy's class have a mathematics test next week.
          She has this hypothesis

          'The more revision you do, the better you will do in the test'

          Describe how she could test her hypothesis.

          **[4 marks]**

_____

_____

_____

_____

_____

_____

_____

_____

AQA Education (AQA) is a registered charity (number 1073334) and a company limited by guarantee registered
England and Wales (number 3644723). Our registered address is AQA, Devas Street, Manchester M15 6EX.

3 of 7

**5**     The table shows the mass of 50 gerbils.

| Mass, $m$ (grams) | Frequency |
|---|---|
| $50 < m \le 55$ | 3 |
| $55 < m \le 60$ | 9 |
| $60 < m \le 65$ | 18 |
| $65 < m \le 70$ | 12 |
| $70 < m \le 75$ | 8 |

**5 (a)**   Work out an estimate of the mean mass of the gerbils.

**[3 marks]**

Answer _____ grams

**5 (b)**   What assumption have you made in calculating the mean mass?

**[1 mark]**

**6**    Trevor stood by a turnstile at a football ground.
He counted the number of males and females that passed through for 1 minute.
The table shows the results.

| Male | 148 |
|------|-----|
| Female | 22 |

**6 (a)**    In total 43 697 people attended the match.

Estimate the number of women that attended the match.

**[2 marks]**

Answer _____

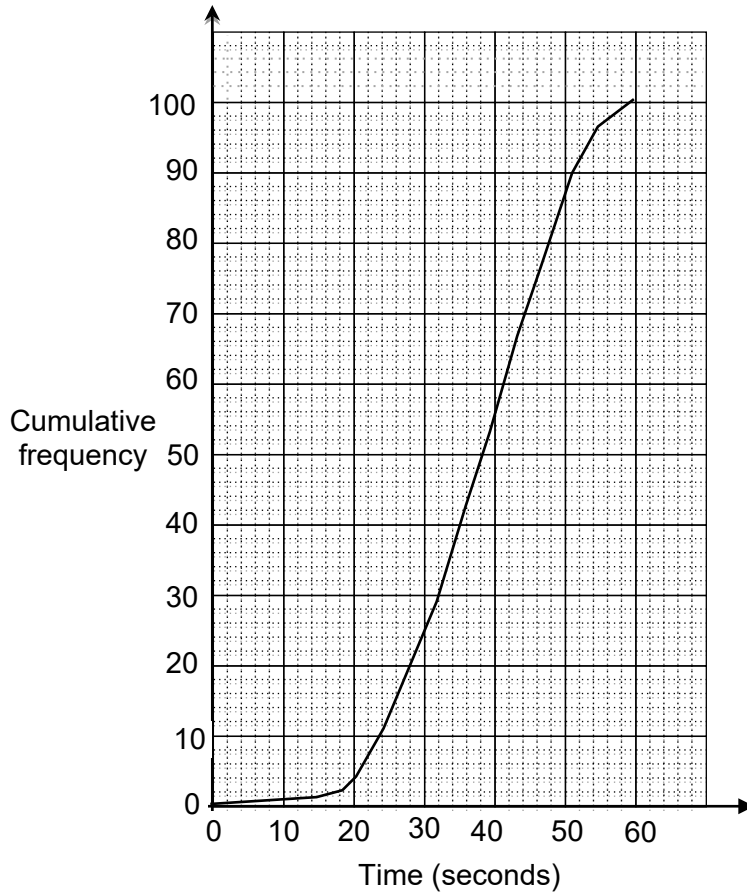**6 (b)**    What assumption have you made in making your estimate?

**[1 mark]**

**7**  The cumulative frequency graph shows the time taken by 100 university students to solve a mathematical puzzle.



**7 (a)**  Work out the median time.

**[1 mark]**

Answer _____ seconds

**7 (b)**  Work out the inter-quartile range.

**[1 mark]**

Answer _____ seconds

**7 (c)** 100 high school students were asked to solve the same puzzle.

The table shows their results.

| Median | 48 seconds |
|---|---|
| IQR | 12 seconds |

Compare the results of the university and high school students.

**[2 marks]**