Teachers at Ridge High School wanted to further investigate the use of electronic devices for recreation by their students by examining the relationship between the amount of use and students' achievement test scores. The data is shown in Figure 2.

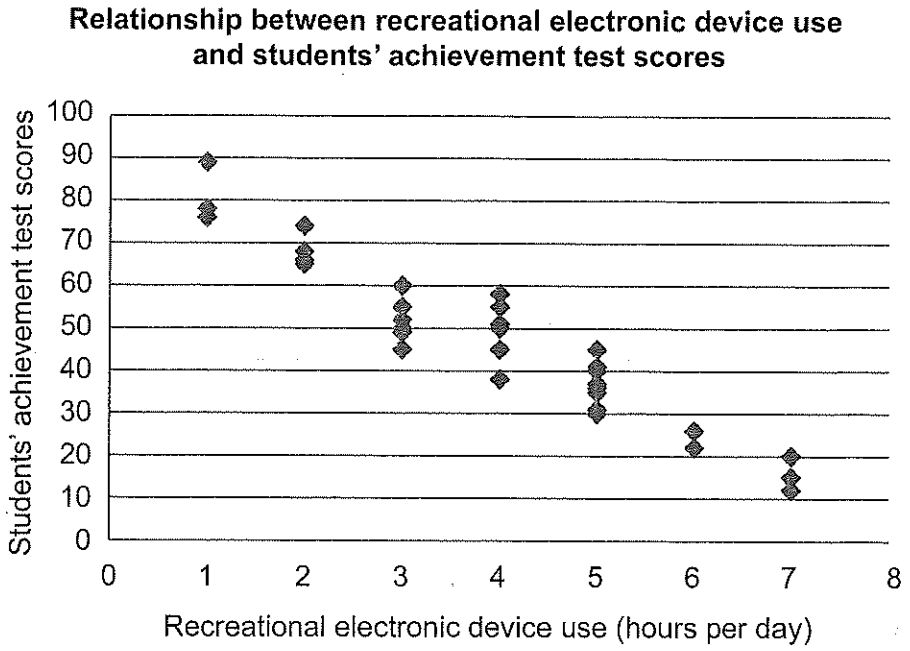

Figure 2

(d) (i) Name the type of graph shown in Figure 2. (1 mark)

Scatterplot

(ii) Identify the type of relationship between the variables shown in Figure 2. (2 marks)

Strong negative correlation

(e) The researchers calculated the correlation between the variables in Figure 2 and found $p < .05$. State whether this result was statistically significant. (1 mark)

This result is statistically significant.

(f) Describe what it means when psychologists find a 'statistically significant' result from a statistical test. (2 marks)

The results are due to a real difference rather than due to chance factors.

(g) The researchers concluded that using electronic devices for recreation for more than 2 hours per day causes lower achievement test scores in students. State whether this was a correct conclusion to draw and explain your response. (2 marks)

No, this is not a correct conclusion to draw because correlational studies cannot provide cause and effect information.

4. [12 marks] *(2015:S3:2)*

Researchers at Highpoint University were interested in finding out whether there was any difference in the likelihood of seeking help from psychologists between people who live in rural and remote areas and people who live in urban areas. They surveyed 200 people (100 rural and remote and 100 urban) on how likely they were to seek psychological help if they needed it.

(a) (i) Identify the independent variable for the study. (1 mark)

Where people lived (rural/remote vs urban)

(ii) Identify the dependent variable for the study. (1 mark)

How likely they are to seek help from a psychologist

(b) Write an operational hypothesis for this study. (2 marks)

It is hypothesized that people who live in urban areas are more likely to seek help from a psychologist than those who live in rural or remote areas, based on survey responses.

(c) Identify two variables the researchers would need to control (i.e. take account of) when conducting this study. (2 marks)

One: *Age group of participants*

Two: *Gender of participants*

3. **[14 marks]** *(2015:S3:1)*

Researchers were interested in finding out how much time students at a small rural high school spent each day on using electronic devices for recreation. They surveyed all the students at Ridge High School and collected the data shown in Figure 1.

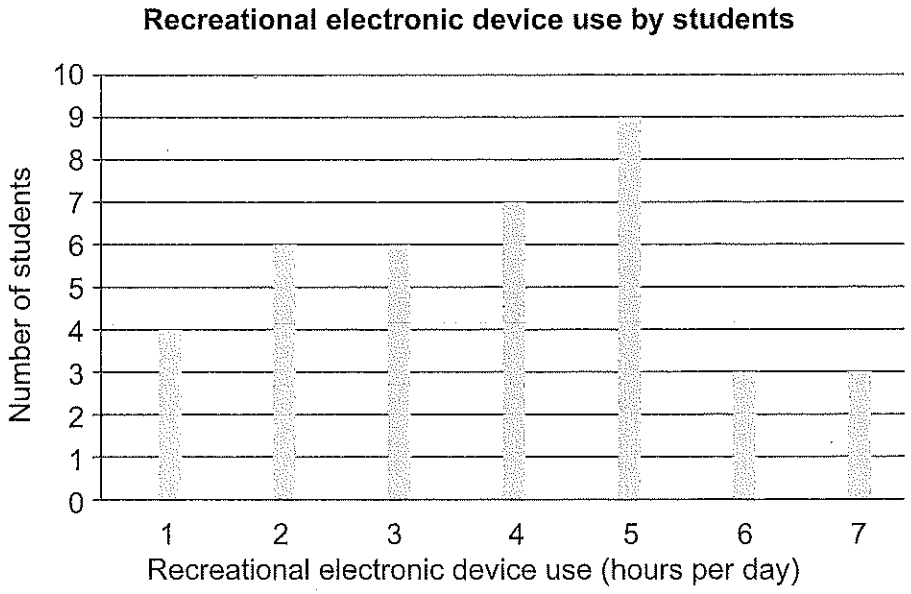

Figure 1

Measures of central tendency for the data in Figure 1 are as follows:

- mean = 3.84
- median = 4.

(a) Identify the mode of the data in Figure 1. (1 mark)

Mode – 5hrs

(b) A new student starts at Ridge High School. This student does not own any electronic devices and therefore spends 0 hours per day using electronic devices for recreation. State the effect on each measure of central tendency if the score of 0 was added to the data in Figure 1.

(i) Effect on mean: (1 mark)

Decrease

(ii) Effect on median: (1 mark)

No effect

(iii) Effect on mode: (1 mark)

No effect

(c) The American Academy of Paediatrics recommends that young people spend no more than 2 hours per day using electronic devices for recreation. Outline what the data in Figure 1 indicate about the use of electronic devices by the students at Ridge High School. (2 marks)

The average student is spending 3.84 hours on electronic devices for recreation which is more than is recommended.