

4. [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.

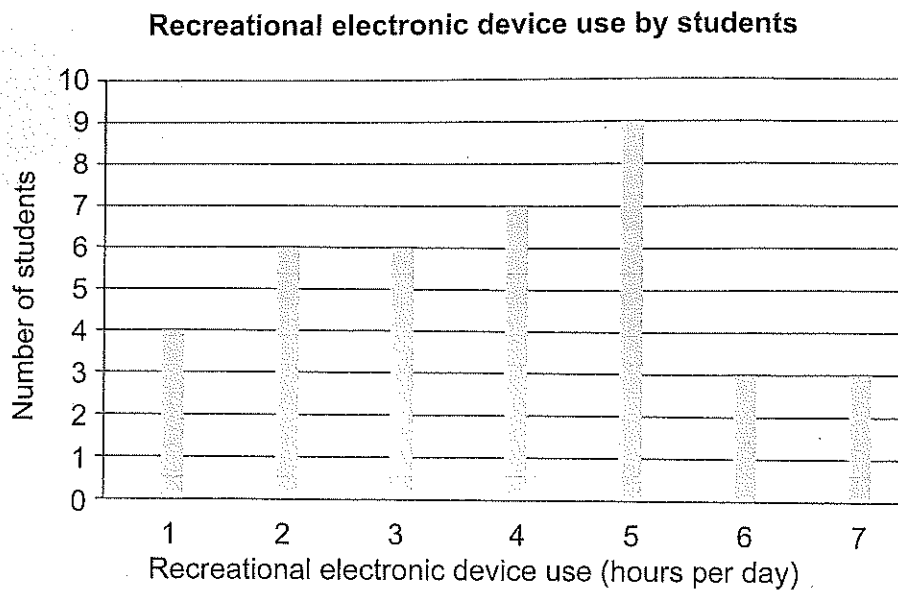


Figure 1

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]

(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]

(ii) Effect on median:

[1]

(iii) Effect on mode:

[1]

- (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]

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.

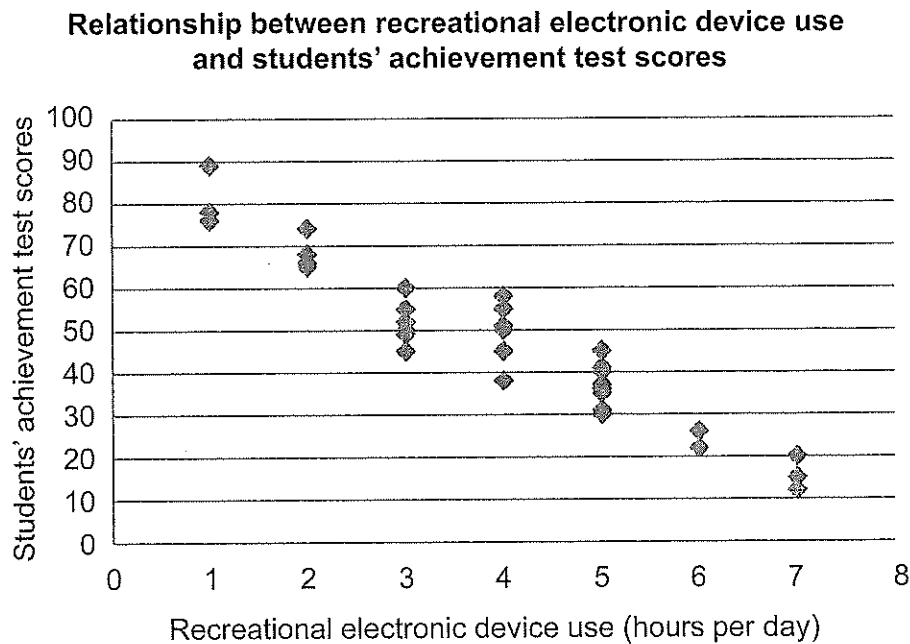


Figure 2

- (d) (i) Name the type of graph shown in Figure 2. [1]
- (ii) Identify the type of relationship between the variables shown in Figure 2. [2]
- (e) The researchers calculated the correlation between the variables in Figure 2 and found $p < .05$. State whether this result was statistically significant. [1]

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