Year 12 Essential Mathematics Unit 3

Statistical Investigation Validation

Using Bivariate Data

**Total Marks: /25 Weighting: 10%**

A group of 24 year 12 students was surveyed to see how much time they spent studying for a test as well as how much sleep they had the night before the test. Their results are recorded in the following table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Time spent studying  (minutes) | Time slept the night before  (hours) | Test score (%) | Time spent studying  (minutes) | Time slept the night before  (hours) | Test score (%) |
| 120 | 6 | 80 | 90 | 7 | 75 |
| 60 | 8 | 60 | 0 | 6 | 30 |
| 90 | 8 | 65 | 10 | 6 | 40 |
| 15 | 8 | 90 | 45 | 8 | 60 |
| 30 | 5 | 45 | 40 | 8 | 60 |
| 45 | 8 | 50 | 30 | 7 | 55 |
| 100 | 7.5 | 75 | 80 | 8 | 80 |
| 60 | 7.5 | 65 | 90 | 7 | 85 |
| 150 | 6.5 | 80 | 120 | 8 | 95 |
| 25 | 7 | 55 | 100 | 8 | 100 |
| 30 | 7 | 60 | 60 | 6 | 70 |
| 75 | 8 | 70 | 60 | 6 | 55 |

Use the data provided to answer the question:

**”Which has the greater effect on test performance, the time spent studying before the test or the number of hours slept before the test?”**