# Standard Deviation Exercises

1. A researcher studied the number of hours of television people of different ages watched each week. The results are shown below:

Table : Amount of TV watched per week (hours)

|  |  |  |  |
| --- | --- | --- | --- |
| Age (years) | 16-20 | 21-26 | 26-30 |
| Mean | 15 | 8 | 8 |
| Standard deviation | 2.3 | 4.1 | 2.2 |

1. What do the means in the table suggest? Justify your answer.

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1. What do the standard deviation values in in the table suggest? Justify your answer.

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1. Intelligence tests provide a standardised measure of ability commonly referred to as IQ. IQ has a normal distribution centred on a mean score of 100 with a standard deviation of 15.

Here is the data from two separate groups of 10 people:

|  |  |  |
| --- | --- | --- |
| IQ | Mean | Standard Deviation |
| Group A | 111 | 11.5 |
| Group B | 114 | 15.4 |

1. What do the means in the table suggest? Justify your answer.

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1. What do the standard deviation values in in the table suggest? Justify your answer.

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# Answers

1. 16-20 years watch on average more TV than 21-30 year olds (quote data). 21-25 and 26-30 watch on average the same amount of TV. 21-25 year olds have a greater variation in the amount of TV they watch than either 16-20 or 26-30 who are broadly similar in their spread of scores. 66% 21-25 year olds watch between mean-sd and mean+sd TV.
2. Group B have on average higher IQ scores (114 vs 111), but have a greater variation in these scores than group A (16.23 versus 12.14). 66% group B have IQs between mean-SD and mean+SD