1. **Which of the following statements about descriptive statistics are correct? Why?**
   1. All of the data is used to compute the mean
   2. The mean should be preferred to the median if the data are noticeably skewed
   3. The variance has the same units of measurement as the original observations
   4. The variance can never be 0
2. Which of the following is **not** true of the median
   1. It is a measure of central tendency
   2. It is relatively easy to calculate
   3. It is based on the whole distribution (data)
   4. It is sensitive to extreme values
3. For each of these variables determine the level of measurement: **categorical, continuous, or potentially EITHER**. Please **EXPLAIN** how for last option (“**potentially either**”).
   1. Interest rate
   2. State in which company is incorporated
   3. Degree of satisfaction with a product
   4. Total family income
   5. Hours of television viewing
   6. Profit margin
   7. Preferred brand of gasoline
   8. Favorite music
4. The following table shows the LOS for a sample of 11 patients. Calculate the range.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Patient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Length of stay | 1 | 3 | 5 | 3 | 2 | 29 | 3 | 4 | 2 | 1 | 2 |

* 1. 29
  2. 1
  3. 5
  4. 28

1. Community Hospital discharged 9 patients on May 1st. The length of stay for each patient is shown in the table below. What is the median length of stay for this group of patient?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Patient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Number of days | 1 | 5 | 3 | 3 | 8 | 8 | 8 | 9 | 9 |

* 1. 5 days
  2. 6 days
  3. 8 days
  4. 9 days

1. The number of pairs of shoes owned by seven college freshman are: 1, 2, 2, 3, 4, 4, 5.
   1. Compute the mean, median, mode, range, and standard deviation.
   2. An eighth student, the heir to a shoe empire, is added to the sample. This student owns 50 pairs of shoes. Re-compute the statistics (mean, median, mode, range, and standard deviation).
   3. Which of the statistics are not much affected by the inclusion of an observation that is far removed from the rest? Does this make sense? Write one paragraph explanation