DAY 4 – Measures of Central Tendency & Spread

1. Gabriel buys 8 DVDs at Discount Dan's DVD shop. Three cost $10.50, 2 cost $7.75, 1 cost $5.25 and 2 cost $3.50. Find the mean, median and mode of the costs of his DVDs.

2. The prizes in the local lottery were worth the following: 2 prizes of $1 000 000, 7 prizes of $350 000, and 10 prizes of $250. Find the mean, median and mode.

3. The hourly rates of employees of a supermarket are $9.25, $8.50, $22.50, $7.85, $8.85, $12.65, $10.85, and $11.50.
   a. Find the mean, median and mode.

   b. Which of your answers best represents the data? Why?

   c. Which of your answers would most misrepresent the data? Why?

4. The following marks were recorded. Suzy: 25, 36, 39, 87, 89, 94
   Ruiz: 45, 56, 88, 89, 92, 98
   a. Find the mean and median for each set of marks.

   b. What is the best measure of central tendency for Suzy, the mean or the median? Why?

   c. What is the best measure of central tendency for Ruiz, the mean or the median? Why?

5. State and explain whether each statement is based on the mean, median or mode.
   a. 0.2% of light bulbs are defective.

   b. The most popular search engine is Google.

   c. The average university grad earns $35 000 annually upon graduation.

   d. Most drinking and driving accidents occur on long weekends.

6. Find the range and standard deviation of the following set of numbers: 3, 10, 8, 20, 4, 4, 3, 8, 8, 8, 12.

7. A group of student landscapers are to keep track of their own weekly hours. They are listed below.
   44, 52, 43, 39, 42, 41, 38, 43, 46, 45, 44, 39, 40, 42, 45
   a. Find the range. Is this a useful tool for representing this data?

   b. Find the mean.

   c. Find the standard deviation.

   d. What can be said about the entry of 52 hours/week?

   e. Calculate the standard deviation again without the 52 hours/week entry.

8. The sale prices of the last 10 homes sold in 1985 were:
$198 000, $185 000, $205 200, $225 300, $206 700, $201 850, $200 000, $189 000, $192 100, $200 400.

   a. What is the average sale price?

   b. What is the standard deviation?

   c. Do you think that a price of $240 000 would be considered unusual? Why or why not?

9. The sales price of the last 10 homes sold in 2005 were:
$345 500, $467 800, $289 000, $675 000, $398 500, $243 000, $899 950, $453 000, $239 000, $256 000.

   a. What is the average sales price?

   b. What is the standard deviation?

   c. Which year was more consistent? How do you know?