Standard Deviation at Work

SD WORKING

Name_____

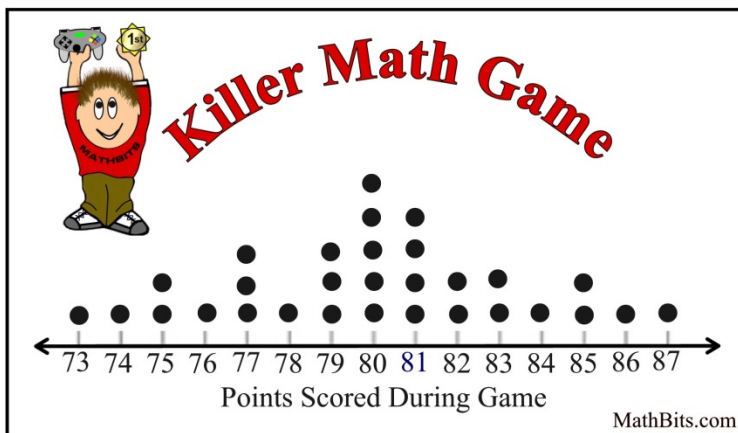*Please use population standard deviation.*

1. a.) The chart below shows three sets of data. For each set, determine the mean and the standard deviation.

Set	Data Items	$\bar{x}$ = Mean	σ = Standard Deviation
Set 1	{4, 5, 6, 7, 8, 9}		
Set 2	{2, 3, 20, 22, 80, 84}		
Set 3	{7, 7, 7, 7, 7, 7}		

b.) Explain how it would possible to determine which of these three sets has the largest standard deviation without actually doing the calculations.

c.) If the standard deviation of a set of data is equal to zero, what can be said about the data within the set?

2.

For the **Killer Math Game**:
- the mean is 80
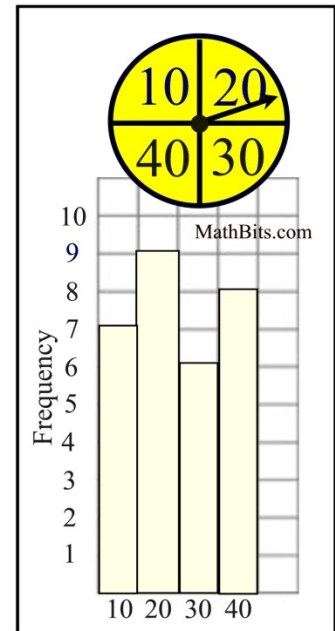- the standard deviation is 3.5
  (to the nearest tenth).

a.) How many scores are above the mean?

b.) How many scores are below the mean?

c.) How many scores are within one standard deviation of the mean?

3. A spinner is whirled 30 times with frequencies of the results shown at the right.

a.) What is the mean of the results?

b.) What is the variance of the results?

c.) Describe how to quickly find the variance using a graphing calculator.

4. Ten scores (*S*) from a computer game were added. The results were reported as: $\sum_{i=1}^{10} S_i = 370$.

a.) What was the mean score?

b.) If the variance of the scores was 4.41, what was the standard deviation?

5. Examine the following graphs showing absentee data frequencies. Determine which of the following is true and explain your choice.
- the first graph has a larger standard deviation than the second graph
- the second graph has a larger standard deviation than the first graph
- both graphs have the same standard deviation

Mean = 0.33

Mean = 4.33