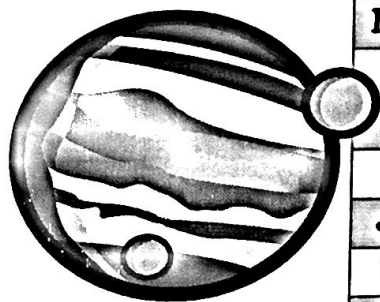
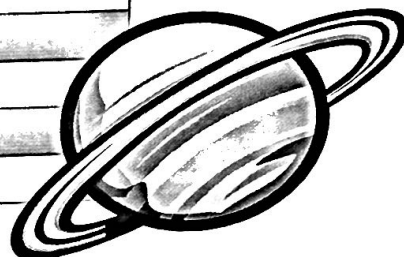


**Homework: Measures of Spread – Standard Deviation**

- 1) A visitor from the star Alpha Centauri has selected you to provide her with information about our solar system. She asks about the length of a typical day in our solar system. Study the following table.



Planet	Approximate Length of a Day in Earth Hours
Mercury	1416
Venus	5832
Earth	24
Mars	24.5
Jupiter	10
Saturn	11
Uranus	22
Neptune	16



- a) Compute the mean length of a day in our solar system in hours.
- b) How many Earth days is this?
- c) Find the median length of a day in our solar system. (Put the data in order!) Median: 23  
~~10~~, ~~11~~, ~~16~~, 22, 24, ~~24.5~~, ~~1416~~, ~~5832~~
- d) Do you think it is better to give your visitor the mean length of a day or the median length of a day? Explain.
- e) Are you happy about giving your visitor one single number? Just the mean, or just the median? Why or why not?
- f) What other information could you give the visitor from Alpha Centauri to help describe the length of a day in our solar system? (Think about spread or shape or outliers to help)

2. Statistics for Common Core classes each period.



Period	Mean grade	Standard Deviation
First	92	8.1
Second	89	3.6
Third	91	7.3
Fourth	85	11.4

a. In which period are students more consistent? Explain how you know.

2<sup>nd</sup> period is most consistent because their standard deviation is smaller → the data is less spread out.

b. What is the variance of first period: \_\_\_\_\_ to \_\_\_\_\_

c. What is the variance of second period: \_\_\_\_\_ to \_\_\_\_\_

d. What is the variance of third period: \_\_\_\_\_ to \_\_\_\_\_

e. What is the variance of fourth period: \_\_\_\_\_ to \_\_\_\_\_

f. Which class period would you like to be a part of and WHY?

3. On last week's math test, Mrs. Smith's class had an average of 83 points with a standard deviation of 8 points. Mr. Tucker's class had an average of 78 points with a standard deviation of 4 points.

a. Which class was more consistent with their test scores? How do you know?

b. What is the variance of Mrs. Smith's class: \_\_\_\_\_ to \_\_\_\_\_  
 mean - s.d. to mean + s.d.

c. What is the variance of Mr. Tucker's class: \_\_\_\_\_ to \_\_\_\_\_