12.3H Deviation   **Name** _____**Per:** _____

SHOW YOUR WORK AND WORK IN PENCIL.

1. Use the points from the following table.

    a. Find the mean (M) _____

26	20	24	17	32	38	29

    b. Find the Standard Deviation or distance from the mean for each piece of data:

Compare your answers to your work on 12.2 #15.

    c. How is the data the same?   d. How is the data the different?

    e. How did the change affect the Mean?   f. How did the change affect the Standard Deviation?

2. **Pull-Up Data:** A gym teacher at a middle   a.   Box Plot
    school collected this data about the number of
    pull-ups by seventh graders in P.E. class:
    2, 3, 4, 3, 2, 5, 5, 6, 6, 6, 9, 4, 10, 3, 2, 1, 9

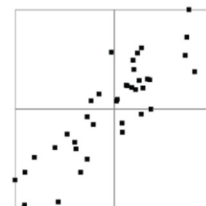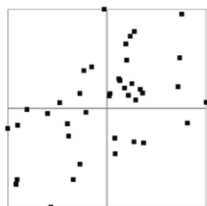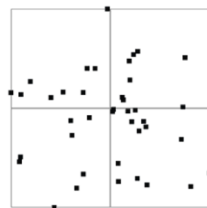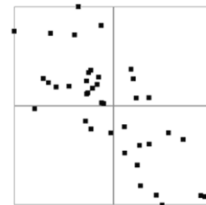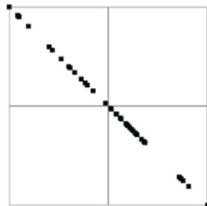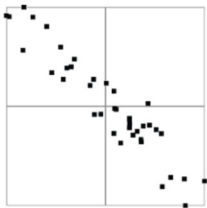   b.   Find the mean   c.   Find the mode   d.   IQR   e.   Standard Deviation:

Describe the correlation then estimate the correlation coefficients for the following graphs.


3. Given the data set 29, 19, 35, 27, 21, 23, 12, 24, 26, 20, 28, 30, 22, 19, 32, 22, calculate the five number summary.

4. What is the smallest number that is above the   5. What is the largest number that is below the
   maximum that would be an outlier? SYW.   minimum that would be an outlier? SYW.

6. Given the data: {29, 19, 35, 27, 21, 23, 12, 24, 26, 20, 28, 30, 22, 19, 32, 22} find the five number summary.

    a.   Min: _____   b.   Q1: _____   c.   Median: _____

    d.   Q3: _____   e.   Max: _____   f.   IQR: _____

    g.   Mathematically show if there is an outlier.

    h.   What is the maximum value a number can be and NOT be an outlier?_____

    i.   What is the minimum value allowed without being an outlier? _____

7. Looking at the two graphs, state which one of the graphs has a larger standard deviation or if the two graphs have the same standard deviation. Explain why.

Graph A — Mean is 1.93
Graph B — Mean is 2.00
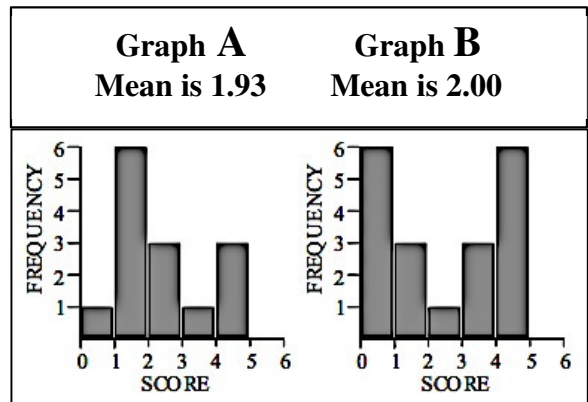
8. Looking at the most common measures of center determine whether the **mean** of the histograms below are **greater than, less than, or about the same** as the **medians**.

A.

B.

C.

D.

E.

F.
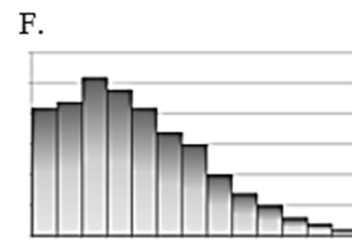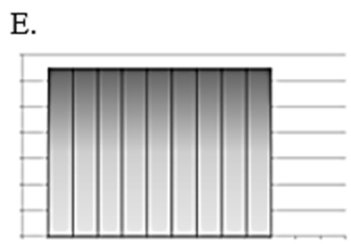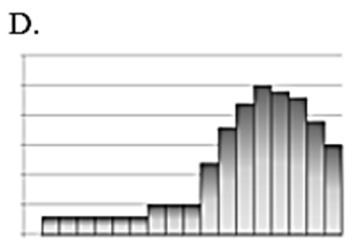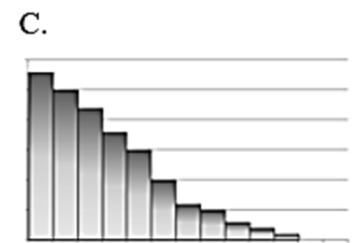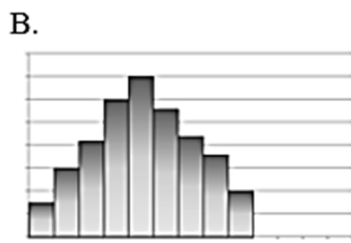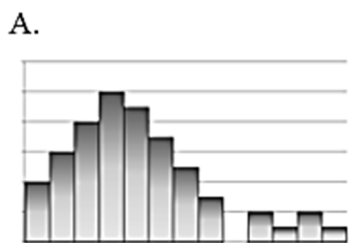
9. Using the graphs to the right to answer the following. Consider your scale.

    a. Which graph has a smaller standard deviation?

    b. Which graph as a larger range of data? _____

    c. What is the average age of a black bear?

    d. What is the mean and median of the grizzly bear?

    e. Are the two spreads equal? _____ Explain:

    f. Describe the difference between escaping from the two types of bears in while eating a ham sandwich.