

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Aim: How can we practice with statistics?

**Determine if the sample of data collected is biased (B) or unbiased (U)**

- 1.) Standing outside of Yankee Stadium and asking people coming out of a game to name their favorite team.
- 2.) Asking every tenth student that walks into the school building what their favorite subject is.
- 3.) Asking a group of employees at a Toyota car dealership what kind of car they like best.
- 4.) Asking every fifth person leaving a grocery store what their favorite brand of cereal is.

**5.) Reporters on a news show want to survey adults about their exercise habits. Which location below is the best place to collect an unbiased sample?**

- A.) a grocery store      B.) a park      C.) Gold's Gym      D.) a rock-climbing expo

**6.) Roberto wants to know the favorite sports of adults in his hometown. He surveys 50 adults at a local baseball game. Choose the answer that best describes the population, sample, and type.**

- A.) *population*: 50 adults at a local baseball game      B.) *population*: 50 adults at a local baseball game  
*sample*: all of the adults in the town      *sample*: all of the adults in the town  
*type*: biased sample      *type*: unbiased sample
- C.) *population*: all of the adults in the town      C.) *population*: 50 adults at a local baseball game  
*sample*: 50 adults at a local baseball game      *sample*: all of the adults in the town  
*type*: biased sample      *type*: biased sample

**Choose the better sample for making a prediction.**

7.) Predicting the number of people at a beach who wear sunscreen:

Sample A: Surveying 50 people randomly

Sample B: Surveying 5 people randomly

Explain your response:

8.) Predicting the number of residents in Suffolk County who own a home:

Sample A: Surveying 1000 residents randomly on the North Shore of Suffolk County

Sample B: Surveying 1000 residents randomly from all parts of Suffolk County

Explain your response:

9.) The 10 members of the Chess club sold candy bars to help fund their trip to the national competition in Florida. The table below shows the number of candy bars each member sold.

Number of Candy Bars Sold				
38	52	52	57	60
50	46	41	0	34

a.) Find the **range** of the data.

b.) Find the **mean** number of candy bars sold.

c.) Find the **median** number of candy bars sold.

d.) How does the size of the mean compare to the size of the median? Why do you think this is?

10.) Which measure of central tendency (mean, median, or mode) would best represent the following data.

a.) A survey that asks students to list their favorite music groups.

b.) A survey that asks students their ages in the 8<sup>th</sup> grade.

c.) A list of salaries of employees in a company. In this company, 100 employees make \$50,000 yearly, and the C.E.O makes \$1,000,000 yearly.

11.) The values of **eleven** houses on Washington Street are shown in the table below.

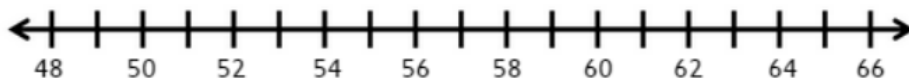
- Find the **mean** value of the eleven homes.
- Find the **median** value of these houses in dollars.
- State which measure of central tendency, the **mean** or the **median**, best represents the value of the 11 houses. Justify your answer.

Value of House	Number of Houses
\$100,000	1
\$175,000	5
\$200,000	4
\$700,000	1

12.) Consider the set of data below that represents the heights of 14 students in inches.

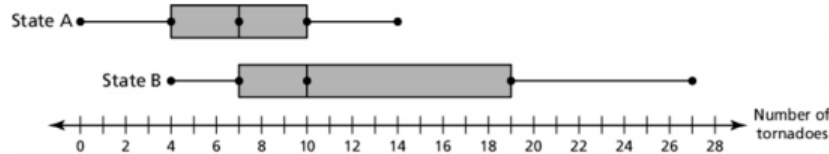
Create a box plot for the set of data.

Lower Extreme:                    **52, 55, 57, 54, 56, 50, 56, 53, 57, 65, 53, 56, 58**  
 Lower Quartile (Q1):  
 Median (Q2):  
 Upper Quartile (Q3):  
 Upper Extreme:



- What is the range of the box plot above?
- What is the interquartile range of the box plot above?
- What value is in the 75<sup>th</sup> percentile?

13.) The double box-and-whisker plot below represents the number of tornadoes per month in 2018 for two states.



- Make two conclusions regarding the box and whisker plot above.
- What number of tornadoes is in the 75<sup>th</sup> percentile for State A?
- What number of tornadoes is in the 75<sup>th</sup> percentile for State B?

14.) The table below shows the number of daily visitors to a website. Find the mean absolute deviation. Round the nearest hundredth, if necessary.

Number of Daily Visitors to a Web Site				
112	145	108	160	122

Data	Data – Mean	Data – Mean

M.A.D = \_\_\_\_\_