

Greetings AP Stats students and parents!

We are embarking on a fascinating journey of developing skills with major concepts and tools for collecting data, analyzing data, and making decisions and conclusions from data. These are valuable skills for life and career.

This message contains three important things to note and act on as necessary;

1. Textbooks: The school has the textbooks and they will be checked out to students for the year.
2. Graphing calculators: Each student must have a graphing calculator with statistics capability. The two options are to purchase a TI 84 or to check out one of the school's older TI 83 calculators. If you want to use a school calculator - let me know that by return email; they will be reserved in order of request.
3. The Summer Warm-up is provided below. It involves studying basic terms, facts, and graphing to be ready for the beginning of the course. Many of these things should be very familiar already. **Review and study these things thoroughly prior to the beginning of school. We will go over any questions the first 2 days and have a quiz over this material on the third day of class.**
 - A document with introductory terms and notes is attached.
 - A document with basic graph information is attached.

AP Statistics: Initial terms and Chapter 1 Introduction Notes

Initial terms:

- n (lower case): Number of items in a *sample* from a *larger group*
- N (upper case): Number of items in the *entire group (population)* being considered.
- Mean; Arithmetic average of a group of numbers
- Median: Middle number of a group of numbers listed in numerical order (average of middle two when there is an even number of data)
- Mode: Most frequently occurring data in a list
- Standard Deviation: Statistic that measures the typical distance of the values in a sample from the mean.

Chapter 1

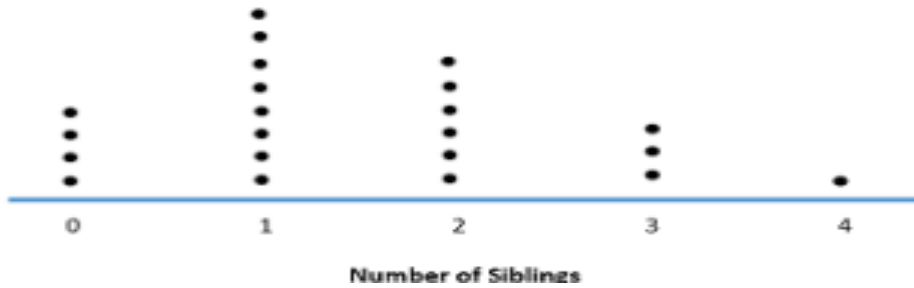
1.0 section: introduction

- Statistics: The science and art of collecting, analyzing, and forming conclusions from data.
- Terms to know:
 - Individual: People, animals, or things being considered in a data set
 - Variable: Description of some characteristic of an individual
 - Categorical: Label placing into a particular group
 - Quantitative: Numerical values: discrete – count or number; continuous – measurements, can be rounded off decimals
 - Distribution: Describes values a variable takes and how often each occurs (often displayed with a graph)

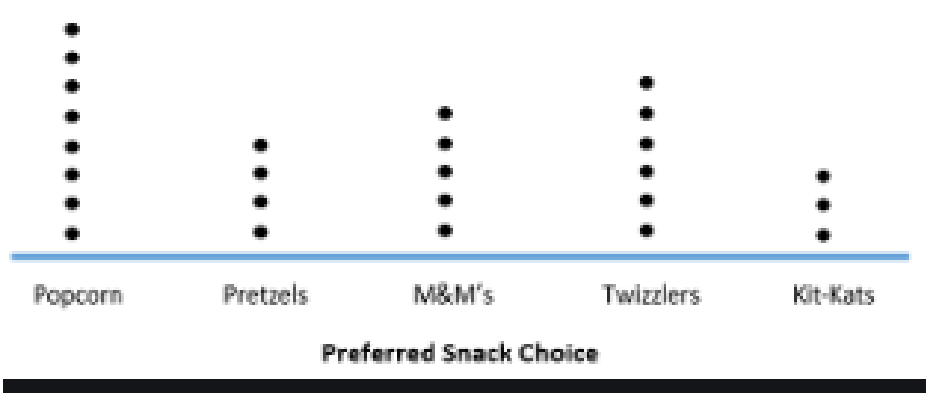
Statistics Graph basics

1. **Dot Plot:** Each dot represents one response for that value.

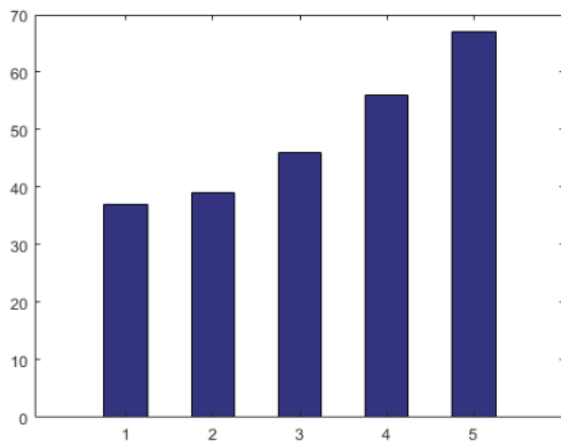
Ex. A



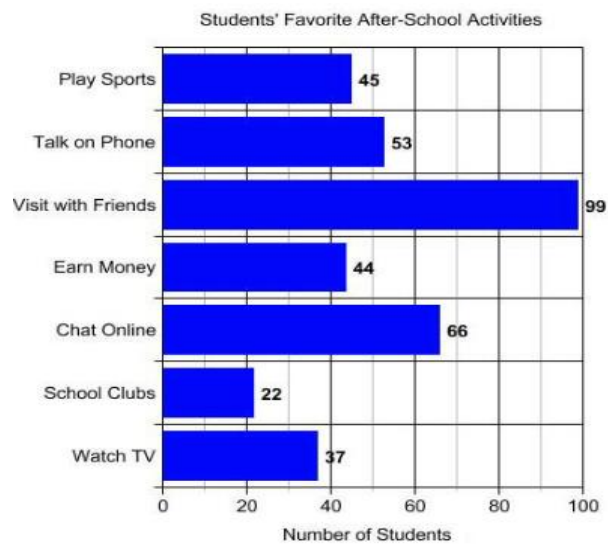
Ex. B



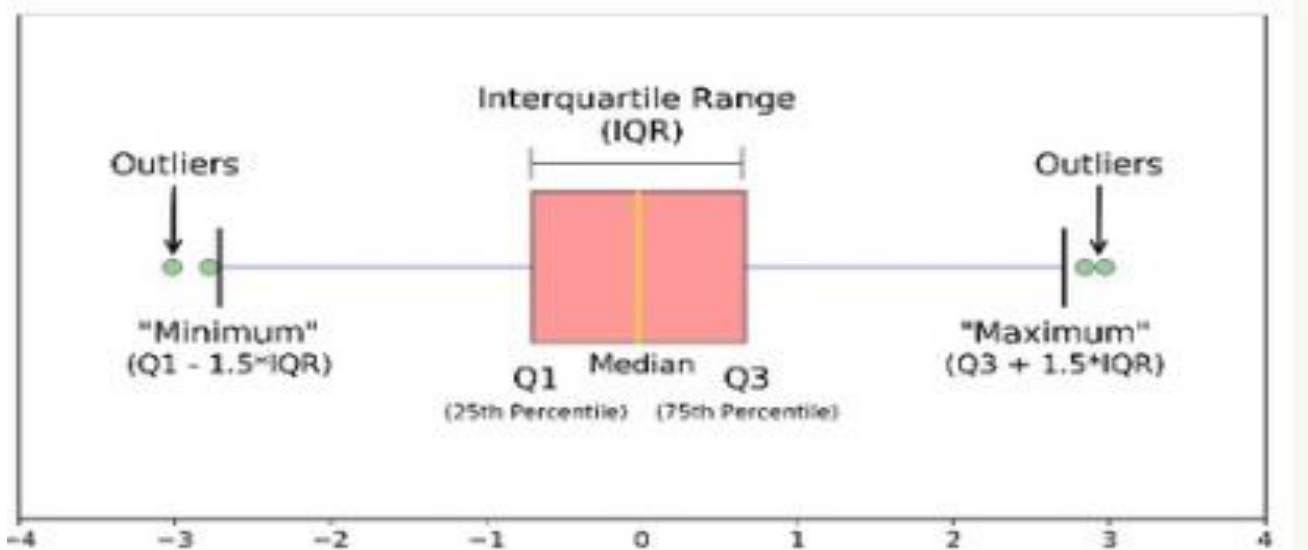
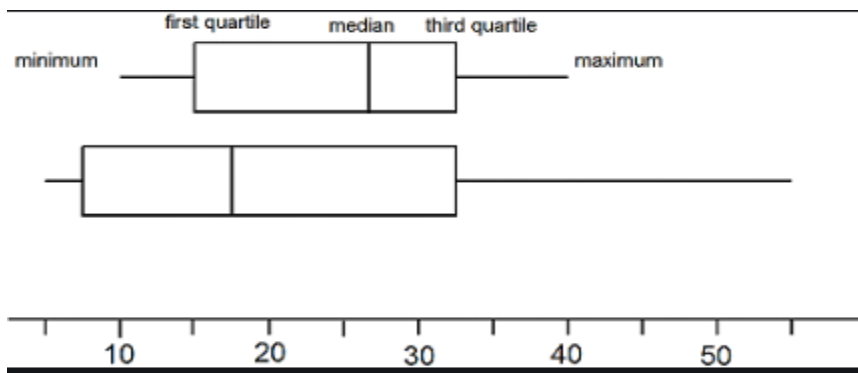
2. **Bar graph:** Bar height, or length, represents value for that variable.



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3. **Box Plot** (box and whisker plot): Division of the data into each 25%; identifies median, minimum, maximum, range, quartile one (Q1: median of lower half of data), quartile three (Q3: median of top half of data), interquartile range (IQR: the middle 50% of data represented by the box, is equal to $Q3 - Q1$), and outliers (data that are more than 1.5 times the IQR below Q1 or above Q3).

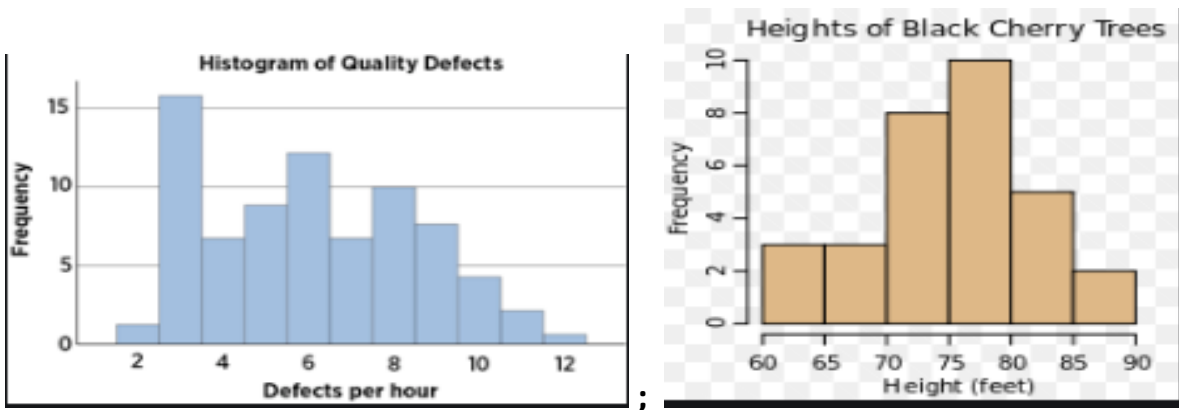


4. Stem and Leaf Plot: Plot that shows each data as a “leaf” (usually the last digit of the number) corresponding to a “stem” (usually the beginning part of the number).

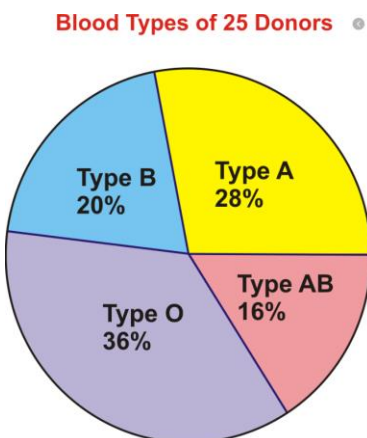
stem	leaf
0	1, 1, 2, 2, 3, 4, 4, 4, 4, 5, 8
1	0, 0, 0, 1, 1, 3, 7, 9
2	5, 5, 7, 7, 8, 8, 9, 9
3	0, 1, 1, 1, 2, 2, 2, 4, 5
4	0, 4, 8, 9
5	2, 6, 7, 7, 8
6	3, 6

Key: 6|3 = 63 years old

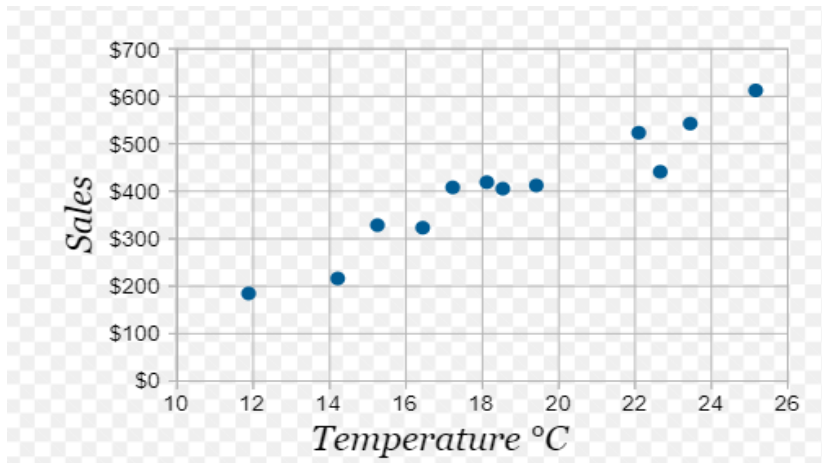
5. Histogram; Shows frequency of data occurrence in designated ranges.



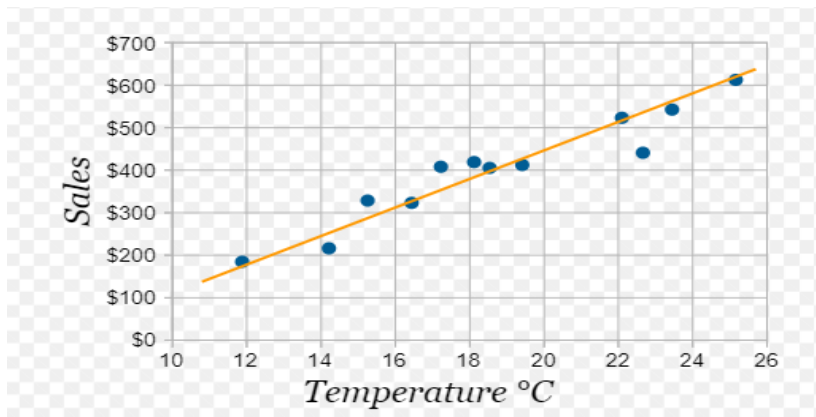
6. Circle Graph or Pie Chart: Shows the percentages of a whole amount that each data represents. Percentage times 360° gives degrees of each sector.



7. Scatter Plot: Each dot shows a variable value matching an initial independent variable.



8. Least Squares Regression Line: Line of best fit calculated from all data.



The **least-squares regression** line is the line that makes the sum of the squares of the vertical distances of the data points from the line as small as possible.

