TYPES OF GRAPHS ON THE AP PSYCHOLOGY EXAM

Correlational Coefficient (Survey)

- Shows the relationship between two or more variables.

- Has a value between -1 & +1

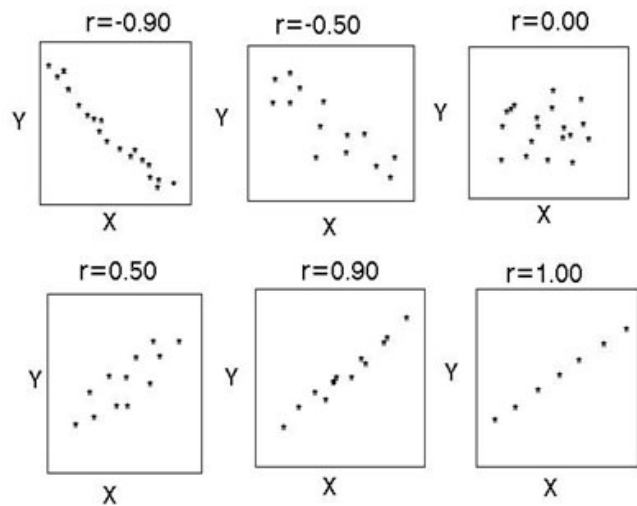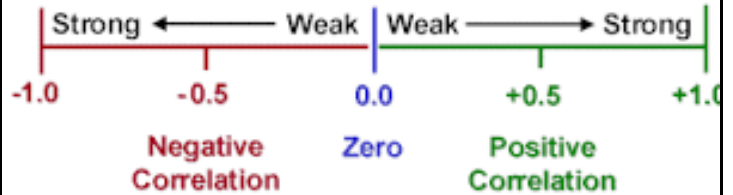- The positive and negative represents the type of relationship.

A positive correlation can be either two factors increasing OR two factors decreasing. Both variables go in the *same direction*.

A **negative correlation** or inverse relationship has one variable that increases, as the other decreases.

- In statistics, the **correlational coefficient** is represented by a lower case r.

- The graph is called a **scatterplot**.

CORRELATION <u>NEVER</u> MEANS CAUSATION

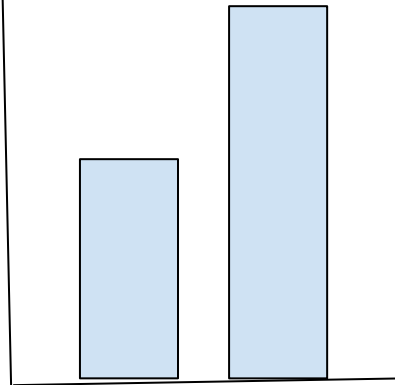## Correlation Coefficient
Shows Strength & Direction of Correlation

Strong ← — Weak | Weak — → Strong

-1.0   -0.5   0.0   +0.5   +1.0

Negative   Zero   Positive
Correlation   Correlation

| r=-0.90 | r=-0.50 | r=0.00 |
| r=0.50 | r=0.90 | r=1.00 |

PRACTICE GUESSING THE CORRELATIONAL
COEFFICIENT
https://istics.net/Correlations/

What is statistical significance?

- It means your findings are not due to chance!

- It means, "The sample averages are reliable and the difference between the experimental and control group is relatively large."

- In an experiment, you are looking for a P less than .05 (P <.05)

- In a correlational study, you are looking for a correlational coefficient (r) closer to +1 or -1. It should be above r >+.5 OR r < -.5

Control   Experimental Group
There is a large difference between the two groups that it is not due to chance.

SCATTER PLOT EXAMPLES

Positive Correlation   Negative Correlation   No Correlation
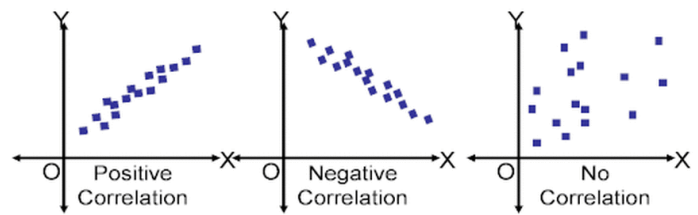
The closer the plots(dots) are to forming a straight line the stronger the correlational coefficient and the closer the number is to +1 or -1.

A NOTE FROM AN AP GRADER:
If you are asked to draw a graph. Keep it simple. More bars on your histogram or bar graph does not make it better!
**Draw it as you see here!**

Frequency Distribution

- This graph is called a **histogram** or bar graph.

- On the Y-Axis is the number of participants. On the X-axis is what is being measured or the **dependent variable.**

- Notice that the shapes of both graphs are a **normal distribution**.

Histogram of Temperature

Frequency

Temperature
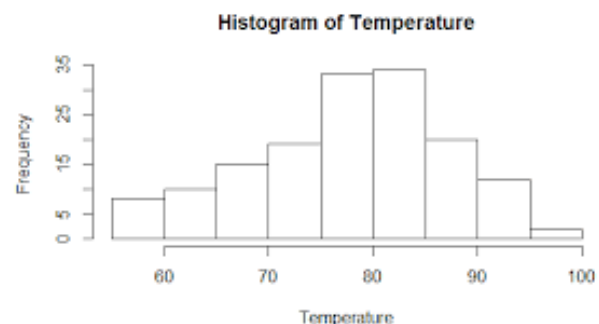
● The **Measures of Central Tendency** (Mean, Median, Mode) fall in the center of the normal curve. The Mean, Median and Mode are all very similar in a normal distribution.	
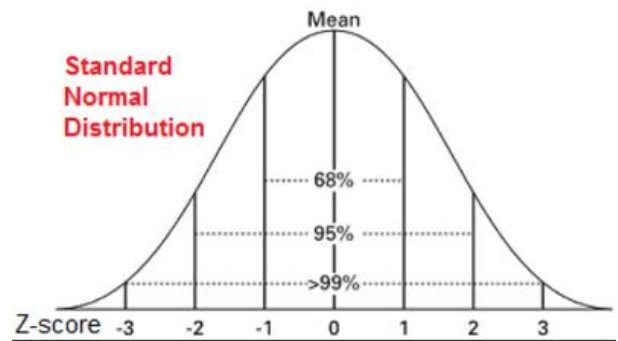
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Positively and Negatively Skewed Distribution

● A **positively skewed distribution** is caused by an extremely high score in a frequency distribution. The high score or outlier causes a graph with a tail to the right.

● A **negatively skewed distribution** is caused by an extremely low score in a frequency distribution. The low score or outlier causes a graph with a tail towards the left.

● The **Measures of Central Tendency** are then changed. The **Mean** will be pulled towards the tail making it less representative of all scores. The **Mode** will still be in the middle and be the most representative of all the scores. The **Median** will still be in the middle.

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