AP Psychology Assignment:

STATISTICS REVIEW

Part 1: Complete the following questions below

A. What score on the Wechsler test indicates genius? _____

B. What score on the Wechsler test indicates cognitively / intellectually disabled? _____

C. What scores indicates an intellectual disability? _____

D. What does mainstreamed in school mean? _____

E. What does normalization mean for individuals with cognitive disabilities? _____

Part 2: Elementary Statistics

A. Define descriptive statistics_____

_____

B. What is the difference between a histogram and a frequency polygon? _____

C. What is the difference between a normal distribution curve (Bell Curve) and a Skewed distribution? _____

D. What factors contribute to a negative skewed distribution?

_____

_____

E. What factors contribute to a positive skewed distribution?

_____

_____

PART 3: For the following problems- The mean is 100 and the Standard Deviation is 15

1. What percentage of individuals on an intelligence test score within one deviation on this exam? _____ two deviations? _____ three deviations? _____

2. If Maria scored a 70 on this exam, how far away is her score from the standard deviation?

4. What percentage of the population that took the IQ test would score within three units of Standard Deviation from the mean?

5. If Mathew scores 145, what **percentile** would he be in? _____

7. If a student scored

(SHOW THE WORK – LOOK AT FORMULA- DO NOT CHEAT!)

$$z = \frac{(x - \mu)}{\sigma}$$

A. 130 what would her Z score be? _____

B. 160 what would her Z score be? _____

C. 55 what would her Z score be? _____

D. 100 what would her Z score be? _____

E. 90 What would her Z score be? _____

Part 4: Problem
Mrs. Johnson has 50 students in her psychology class. The scores on her AP midterm are normally distributed with a mean of 75 and a standard deviation of 5.

A. How many students could be expected to score within one SD on her test if she has a bell curve for her grades? _____

B. If Michael received an 85 on the test what would be his Z score? _____

C. If Mary scored a 100 why would she be considered an outlier?

D. How would Mary's score impact on the mean?_____

E. What percentage of students would have scored between a 65 and an 85?

_____

Part 5: Consider the following three tests Mrs. Johnson administered to students in her AP World history class –

TEST 1 – 75, 85, 98, 62, 75, 82, 88, 94, 55, 96

-MEAN____SD____

TEST 2 – 72, 68, 79, 33, 48, 97, 65, 88, 44, 39

- MEAN____SD____

TEST 3 – 100, 98, 94, 96, 88, 81, 90, 89, 90, 100

- MEAN____SD____

A. Calculate the mean of each of the above tests.
B. Calculate the Standard deviation of each of the tests.
C. Which test has the largest Standard Deviation? Smallest SD? _____
D. How could you figure which test has the largest SD without using the formula?

E. What observations can you make about these three tests based on the data presented?

PART 6: For the following problems-The mean is 100 and the Standard Deviation is 15

1. What percentage of individuals on an intelligence test score within one deviation on this exam? _____ two deviations? _____ three deviations? _____

2. If Maria scored a 70 on this exam – What would be the SD from the mean? _____

4. What percentage of the population that took the IQ test would score within three units of Standard Deviation from the mean?

5. If Mathew scores 145 what **percentile** will he be in? _____

7. If a student scored (SHOW THE WORK – LOOK AT FORMULA ABOVE - DO NOT CHEAT!)

$$z = \frac{(x - \mu)}{\sigma}$$

A. 130 what would her Z score be? _____

B. 160 what would her Z score be? _____

C. 55 what would her Z score be? _____

D. 100 what would her Z score be? _____

E. 90 What would her Z score be? _____

PART 7

A. What is the mean of the following distribution of scores: 2, 3, 7, 6, 1, 4, 9, 5, 8, 2?

B. What is the median of the following distribution of scores: 1, 3, 7, 7, 2, 8, 4?

C. What is the mode of the following distribution: 8, 2, 1, 1, 3, 7, 6, 2, 0, 2?

D. Which of the following is the measure of central tendency that would be most affected by a few extreme scores?

E. What is the mode of the following distribution of scores: 2, 2, 4, 4, 4, 14?

F. What is the range of the correlation coefficients?

G. What is the strongest correlation?

H: What type of graph is characterized by a cluster of dots, each of which represents the value of two variables; the slope of the points suggests the direction of the relations

I. A study was conducted on the correlation between AP Psychology grades and AP scores. The study concluded that there was in fact a positive correlation between the two variables. Which of the following coefficients would demonstrate the highest correlation in regards to this study?

a. -.08
b. .5
c. .65
d. .85
e. 0

J. A study was conducted on the correlation between Hygiene and number of romantic dates one goes on per month. The study concluded that there was in fact a negative correlation between the two variables. Which of the following coefficients would demonstrate the highest correlation in regards to this study?

a. -.06
b. .4
c. .75
d. .83
e. 0

K. A study was conducted on the correlation between hair color and IQ. The study concluded that there was no correlation between the two variables. Which of the following coefficients would demonstrate the highest correlation in regards to this study?

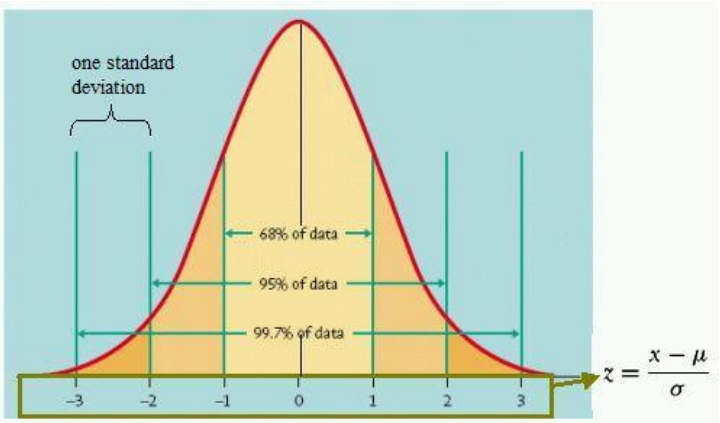
a. -.09
b. .56
c. .82
d. .90
e. 0

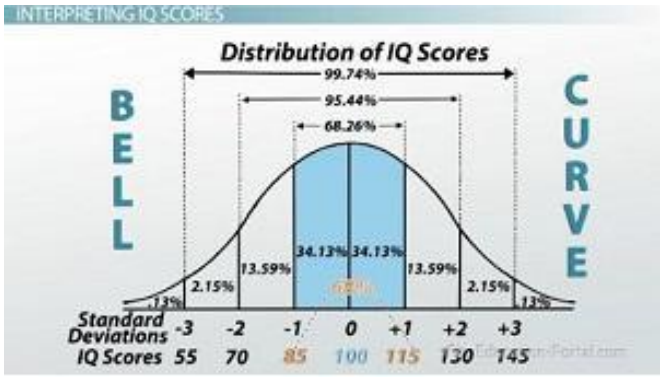
L. A study was conducted on the correlation between weight and self-esteem. The study concluded that there was in fact a negative correlation between the two variables. Which of the following coefficients would demonstrate the highest correlation in regards to this study?

a. -.08
b. .5
c. .65
d. .85
e. 0

M. What can be concluded from a study that found those who drink 2 cups of coffee a day score an average of 85% on comprehension tests compared to subjects who do not drink coffee and score an average of 73% on comprehension tests? Explain

CHEAT SHEET





Understanding Standard Scores

FYI-

- A standard score is one way to compare a student's performance to that of the standardization sample.
- A standard score is calculated by taking the raw score and transforming it to a common scale.
- A standard score is based on a normal distribution with a mean and a standard deviation
- The black line at the center of the distribution represents the mean.
- The green lines represent standard deviations.

The Z score $z = \frac{(x - \mu)}{\sigma}$ tells us how many standard deviations in any given sample a score represents above, at or below the mean

To find the Z score of a sample, you'll need to find the **standard deviation** and **mean** of a set of data, find the difference between that sample and the mean, and divide it by the standard deviation. In the questions below I want to see the work (Not the heuristic) in solving for the Z score

X= The Individual score

μ = The Mean

σ = Standard Deviation

So if my score is 115 and the mean is 100 and my SD is 15

115-100=15

Now I divide 15 by 15 and my Z score should be positive 1