

You have collected data on the average weekly amount of studying time (T) and grades (G) from the peers at your college. Changing the measurement from minutes into hours has the following effect on the correlation coefficient:

- A) decreases the correlation coefficient by dividing the original correlation coefficient by 60
- B) results in a higher correlation coefficient
- C) cannot be computed since some students study less than an hour per week
- D) does not change the correlation coefficient

ANSWER: D

The correlation coefficient

- A) lies between zero and one.
- B) is a measure of linear association.
- C) is close to one if X causes Y.
- D) takes on a high value if you have a strong nonlinear relationship.

ANSWER: B

Degrees of freedom

- A) in the context of the sample variance formula means that estimating the mean uses up some of the information in the data.
- B) is something that certain undergraduate majors at your university/college other than economics seem to have an ∞ amount of.
- C) are $(n-2)$ when replacing the population mean by the sample mean.

ANSWER: A

A large p-value implies

- A) rejection of the null hypothesis.
- B) a large t-statistic.
- C) a large \bar{Y}_{act} .
- D) that the observed value \bar{Y}_{act} is consistent with the null hypothesis.

ANSWER: D

The central limit theorem

A) states conditions under which a variable involving the sum of Y_1, \dots, Y_n i.i.d. variables becomes the standard normal distribution.

B) postulates that the sample mean \bar{Y} is a consistent estimator of the population mean μ_Y .

C) only holds in the presence of the law of large numbers.

D) states conditions under which a variable involving the sum of Y_1, \dots, Y_n i.i.d. variables becomes the Student t distribution.

ANSWER: A

Assume that Y is normally distributed. Moving from the mean 1.96 standard deviations to the left and 1.96 standard deviations to the right, then the area under the normal p.d.f is

A) 0.67

B) 0.05

C) 0.95

D) 0.33

ANSWER: C

The expected value of a discrete random variable

A) is the outcome that is most likely to occur.

B) can be found by determining the 50% value in the c.d.f.

C) equals the population median.

D) is computed as a weighted average of the possible outcome of that random variable, where the weights are the probabilities of that outcome.

ANSWER: D

What is the expected value when throwing a dice?

A) 2.3

B) 4.5

C) 3

D) 3.5

ANSWER: D

The probability of an outcome

A) is the number of times that the outcome occurs in the long run.

B) equals $M \times N$, where M is the number of occurrences and N is the population size.

C) is the proportion of times that the outcome occurs in the long run.

D) equals the sample mean divided by the sample standard deviation.

ANSWER: C