

All of the following are examples of **DISCRETE** random variables EXCEPT: _____.

-
- ☐ the outcomes from rolling dice
-
- ☐ the rating of customer satisfaction on a scale where "1" is "highly unsatisfied;" "2" is "unsatisfied;" "3" is "neutral;" "4" is satisfied;" and "5" is "highly satisfied."
-
- ☐ the number of defectives in a sample of size $n = 15$.
-
- ☐ the weight (in pounds) of an American mid-size automobile.
-
- ☐ the number of apples in a basket

According to historical data, there are 300 days of sun in Mount Dora, Florida each year. This suggests the probability of a sunny day in 2021 in Mount Dora, Florida is $\frac{300}{365}$ or approximately 0.82 (BELIEVE ME: 300/365 IS approximately 0.82 - - you DON'T need to check the arithmetic!!).

This is an application of _____.

-
- ☐ classical probability
-
- ☐ conditional probability
-
- ☐ subjective probability
-
- ☒ relative frequency probability
-
- ☐ non-parametric probability.

A **DISCRETE** random variable is _____.

- ☒ a variable for which there are "gaps" between the possible values.
- ☐ a variable for which there are theoretically "no gaps" between the possible values.
- ☐ a variable like weight, or distance, or time.
- ☐ a variable for which there is only one possible value.
- ☐ a variable that has outcomes over one or more continuous intervals of real numbers.

For a normal distribution, as the value of the parameter μ changes (that is, as value of the normal distribution mean changes), _____.

- ☐ the location of that normal distribution on the x-axis changes
- ☐ that normal distribution's median remains unchanged
- ☐ the density of that normal distribution INCREASES.
- ☐ that normal distribution becomes either "wider" or "narrower."
- ☐ the density of that normal distribution DECREASES.

The **EXPECTED VALUE** of a random variable is analogous to ("similar to") the notion of a population _____.

- ☒ mean
- ☐ variance
- ☐ standard deviation
- ☐ kurtosis
- ☐ correlation coefficient

Two events are said to be statistically INDEPENDENT (or probabilistically INDEPENDENT) if _____.

- ☐ the probability of each event occurring IS affected by whether the other event has or has not occurred
- ☒ the probability of each event occurring IS NOT affected by whether the other event has or has not occurred
- ☐ the probability of one event prohibits the occurrence of the other
- ☐ the probability of one or both events is greater than one
- ☐ the two events occur at the same time

The **STANDARD NORMAL DISTRIBUTION** is a special case of the normal distribution in which _____.

- ☒ the mean = 0 and the standard deviation = 1
- ☐ the mean = 0 and the standard deviation = 0
- ☐ the mean = 1 and the standard deviation = 1
- ☐ actually, there's no such thing as a "**STANDARD NORMAL DISTRIBUTION**."
- ☐ the mean = 1 and the standard deviation = 0

A **PROBABILITY** is _____.

- ☐ the observed result of an experiment
- ☐ a number between "-1" and "+1" (inclusive)
- ☒ the likelihood that an event will occur represented by a number between "0" and "1" (Inclusive.)
- ☐ the chance that an event WILL NOT happen
- ☐ the number of successes divided by the number of failures

In Microsoft Excel, the function that will correctly compute the STANDARD DEVIATION of a **SAMPLE** data set, is _____.

- ☐ =STDEV.S(*data range*)
- ☐ =SIGMA.SAMP(*data range*)
- ☐ =STAND.DEV.SAMPLE(*data range*)
- ☐ =STDEV.P(*data range*)
- ☐ =MODE.SNGL(*data range*)

In a **BOX PLOT** (also known as a **BOX & WHISKER PLOT**) the distance between the right vertical line of the box and the left vertical line of the box represents the _____.

- ☐ outlier values
- ☐ outerquartile range
- ☐ median and mode
- ☐ interquartile range
- ☐ minimum and maximum

Which of the following normal distributions will have the greatest spread when graphed?

- ☐ The mean (μ) = 10 and the standard deviation (σ) = 1.6
- ☐ The mean (μ) = 5 and the standard deviation (σ) = 1.5
- ☐ The mean (μ) = 10 and the standard deviation (σ) = 1.0
- ☐ The mean (μ) = 5 and the standard deviation (σ) = 1.52
- ☒ The mean (μ) = 5 and the standard deviation (σ) = 1.75

Which condition(s) must a random variable meet to be classified as a "binomially distributed" random variable?

- ☐ Statistically (probabilistically) independent trials.
- ☐ Fixed number of trials.
- ☐ Constant probability of "success" from trial to trial.
- ☐ Exactly two possible outcomes on each trial: one termed a "success" and the other termed a "failure."
- ☐ All of the other responses describe conditions which must be met for a random variable to be classified as a "binomially distributed" random variable

Which of the following are properties of the normal distribution?

- ☐ The mean, median, and mode are all the same numerical values.
- ☐ The distribution is unimodal.
- ☐ All of the characteristics described in the other four responses are properties of the normal distribution.
- ☐ The distribution is symmetrical.
- ☐ Most values are close to the mean; fewer and fewer values are located the further and further away from the mean.

Which of the following random variables is properly considered to be "continuous?"

- ☐ The amount of gasoline that will be consumed in the State of Florida in the next six months.
- ☐ The number of AMA physicians registered in Orange County, Florida.
- ☐ The number of CVS Pharmacy drug stores in a randomly selected sample of Lake County drug stores.
- ☐ The number of fans who will attend next year's Super Bowl.
- ☐ The number of college seniors who are majoring in business administration.

Based on our sample survey results, we conclude that between 67% and 73% of all eligible voters think the current economic climate will last at least two more years. Our sample survey effort in concert with the conclusion(s) we draw from it is an example of:

- ☐ Destructive statistics
- ☐ Integral statistics
- ☐ Prescriptive statistics
- ☐ Inferential statistics.
- ☐ Descriptive statistics.

A _____ associates a numerical value with each possible outcome of a random phenomenon. (Fill in the blank with the correct response below)

- ☐ qualitative variable
- ☐ sample variable
- ☐ conditional variable
- ☐ random variable
- ☐ discrete variable

When creating a frequency distribution or histogram, each observation or data value should be a member of one and only one class (or category, or bin.) In other words, the set of classes (or categories or bins) should be:

- ☐ collectively exhaustive
- ☐ Divisive.
- ☐ Reclusive
- ☐ Conclusive
- ☐ mutually exclusive

The so called "shortcut formula" to calculate the expected value of a binomial distribution with parameters n and p is given by:

- ☐ $Z = (X - \mu) / \sigma$
- ☐ $f(X) = 1 - (\mu / \sigma)$
- ☐ $E(X_1 - X_2) = E(X_1) - E(X_2)$
- ☐ $E(X) = n * p$
- ☐ The binomial distribution does not have an expected value.

In statistical terminology, a characteristic of a sample, such as the sample mean or the sample proportion, is commonly referred as a:

- ☐ universe.
- ☐ statistic.
- ☐ parameter.
- ☐ trimmed mean.
- ☐ standard error.

The name of the probability distribution which most appropriately describes the **NUMBER** of "on-time" deliveries United Parcel Service (UPS) achieves **PER DAY** in Lake County, Florida would be the:

☐ Poisson distribution.

☐ Normal distribution.

☐ Exponential distribution.

☐ Binomial distribution.

☐ Hypergeometric distribution.