3001 01 001 James Curtis Jr, 202 739 1962, jameseedwardcurtisjr@yahoo.com, 11/16/17 6:45 AM – 7:15 AM, ***Statistic I.***

3002 02 002 jbstatistics, www.youtube.com/watch?v=UrOXRvG9oYE.

3003 03 003 **Discrete Probability Distributions**, Bernoulli, random variable 0 or 1, i.e., no or yes.

3004 04 004 Bernoulli, when n =1 (single Bernoulli trial), is Binomial fixed trials, random successes.

3005 05 005 Geometric, given random trials, p(1st success), Similarly, negative binomial, number of random trials needed for fixed successes, not =1.

3006 06 006 Binomial, draws with replacement, is approximately Hypergeometric, draws without replacement, when using small sample of population.

3007 07 007 Binomial is approximately Poisson, n (number of draws) is large, p (probability of success) is small.

3008 08

3009 09 001 James Curtis Jr, 202 739 1962, jamesedwardcurtisjr@yahoo.com, 11/16/17 7:45 AM – 8:15 AM, ***Statistics I.***

3010 10 002 jbstatistics, www.youtube.com/watch?v=jmqZG6roVqU.

3011 11 003 Introduction to **Discrete Random Variables.**

3012 12 004 graph or histogram of discrete (jagged); histogram of continuous (smoothed).

3013 13 005 notation P(X=x), 0<=p(x)=>1, Sum p(x)=1 for all x.

3014 14 006 probability distribution, i.e., Probability of Value of X=2 is 0.36, Probability of Value of X=1 is 0.24x2, Probability of Value of X=0 is 0.16.

3015 15 007 random, definition, 'we don't know..until we..(act)", 'value depends on chance'.

3016 16 008 random variable, definition, continuous='any value in an interval', 'infinite'.

3017 17 009 random variable, definition, discrete='countable number of possible values', 'finite', 'some' including 'decimals', 'negative values'.

3018 18

3019 19

3020 20 001 James Curtis Jr, 202 739 1962, jameseedwardcurtisjr@yahoo.com, 11/16/17 3:45 PM – 5:15 PM, ***Statistics II.***

3021 21 002 jbstatistics, https://www.youtube.com/watch?v=Zbw-YvELsaM.

3022 22 003 Sampling inference technique is a f(sampling distribution of a statistic). **Sampling Distribution** of a statistic = probability distribution of that statistic; distribution as a result of repeated draws from the population.

3023 23 004 i.e., Of a population of 16 students, what is the average age of a student (in months)?; the true population mean (mu) of 16 students is unknown.

3024 24 005 i.e., the calculation of the sample mean (x bar) of a sample of 3 students, the value of a statistic (including the sampling mean) vary from sample to sample.

3025 25 006 The closeness of sample mean (x bar) to population mean (mu) |is important|; mathematical arguments from a sampling distribution are used to make statements about population (parameters).

3026 26 007 The histogram of sample means will closely resemble the true sampling distribution of the sampling mean; the sampling mean has a sampling distribution that is approximately normal, in most cases, not here.

3027 27 008 i.e.,(16 |students with unknown ages| 'choose' 3 |students sampled randomly|) = 560 |possible samples|. sd (x bar) = D(x bar |all possible samples of size 3 from this population).

3028 28 009 i.e. since the samples are repeated so many times, the histogram of sampling mean will very closely resemble the true sampling distribution of x bar, in this scenario.

3029 29 010 **JECJEF c/o James, PO Box 3126 WDC 20010, james@jecjef.net**

3030