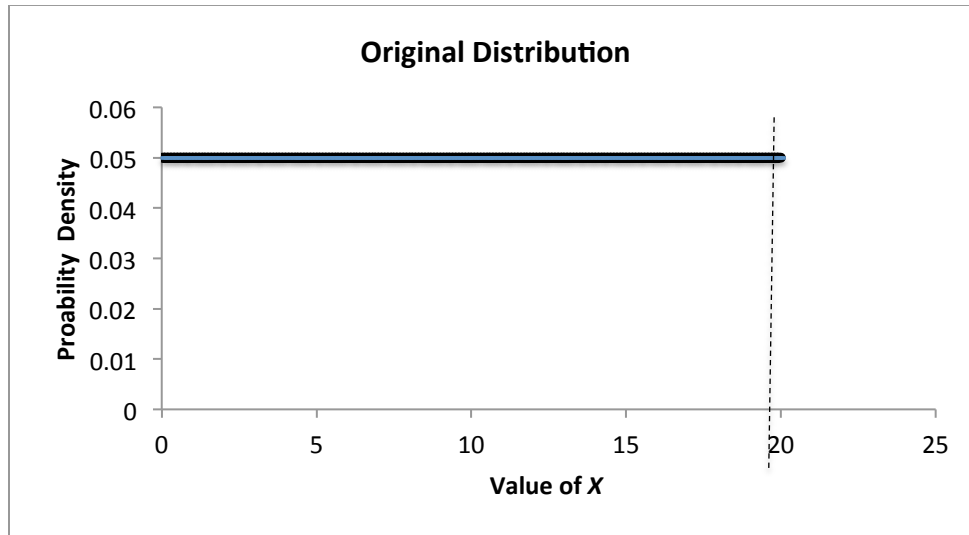


Excel Assignment 4 Solutions: Central Limit Theorem: Means

1. Quantitative and continuous. Notice that the values of the variable are numerical. The probabilities do not all to 1, but the area under the graph is 1.
2. Using the *Original* sheet:
 - (a) Graph is



- (b) Uniform
 - (c) To make are under curve equal to 1.
3. In the *Samples_4* sheet
 - (a) Answers will be different, but all close to 10. (Example: 10.14.)
 - (b) Answers will be different, but a bit less than 3. (Example: 2.89.)
 - (c) Close.
 - (d) Not close; smaller.
4. In the *Samples_25* sheet
 - (a) No answer
 - (b) Answers will be different, but all close to 10. (Example: 9.97.)
 - (c) Answers will be different, but a bit more than 1. (Example: 1.14.)
 - (d) Close.
 - (e) Not close; smaller than before.
5. In the *Samples_50* sheet
 - (a) The $=20*\text{RAND}()$ generates a random number between 0 and 1 and then multiplies it by 20. The result is a random number between 1 and 20.
 - (b) No answer.
 - (c) No answer.
 - (d) Answers will be different, but all close to 10. (Example: 10.01)

- (e) Answers will be different, but less than 1. (Example: 0.83.)
 - (f) Close.
 - (g) Not close; smaller than before.
6. Comparing the means and SDs of the sample means of samples of a fixed size n as n increases:
- (a) Mean remains approximately 10
 - (b) Standard deviation decreases as n increases.