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ECO-602 Analysis of Environmental Data
10/27/2021 -LATE

Individual Assignment: Probability and Frequentist Concepts

Q1: 0.421875
dbinom(3, 4, 0.75)

Q2: 0.6835937
pbinom(3, 4, 0.75)

Q3: 0.6328125
pbinom(3, 5, 0.75)
1 - 0.3671875

Q4: 0.3445783
pnorm(1.2, 2, 2)

Q5: 0.6554217
pnorm(1.2, 2, 2)
1 - 0.3445783

Q6: -0.7257469
pnorm(1.2, 2, 2)
- pnorm(3.2, 2, 2)

Q7: With submitting the sample button multiple times the sample data changes slightly each time but it always stays within the skewed curve line of the chart. The more times I run the model, the closer to a more gradual curve it gets.

Q8: With changing the sample size to 2, the histogram still follows the curve of the above graph but not as closely. After a times submitting the sample, the graph stops fluctuating and levels out. The shape looks little closer to a normal distribution than it did with a sample size of 1.

Q9: With a sample size of 15 and 50 draws the graph looks like a normal distribution. With each submission it gets a little closer to a normal distribution.

Q10: There is a drastic change from sample size 1 to 2 because you are doubling the number of samples. This instantly starts to move towards a more normal distribution.

Q11: The two main factors that determine the width of the sampling distribution of the mean are the sample size and the population size.

Q12: 15625

$25 * 25 * 25 = 25^3 = 15625$

The library of babel has 25 characters, 22 letters, the period, the comma, and the space.

Q13: $410 * 40 * 81 = 1328400 = 25^{1328400}$