Estimating probability mass functions and probability density functions

MathsNET
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0.1 Level 1

This exercise should be revision: Use the blocks below to generate 50 binomial random variables from a distribution with $n = 6$ and $p = 0.5$. You should plot each of these random variables on the graph. The ith random variable you generate, X_i, should be at the coordinate (i, X_i).

0.2 Level 2

Use the blocks below to generate 20 binomial random variables from a distribution with $n = 6$ and $p = 0.5$. Each of these random variables will take a value of either 0, 1, 2, 3, 4, 5 or 6. Now instead of plotting each of the random variables on the graph I would like you to use the blocks below to count the number of times each of the random variables come up and to plot how these counts of the number times a particular number comes up changes with time.

0.3 Level 3

In the last exercise you should have plotted the number of times each of the random variables came up. What I would now like you to do is to plot the fraction of times each of the random variables came up in the experiment. If you do this correctly the sum of all the fractions will be equal to one.

0.4 Level 4

We are now going to repeat the exercise of calculating a histogram that we just performed but we are going to do the exercise for a normal random variable. Divide the range between -4 and +4 into 20 intervals of length 0.4 and create a list with one scalar for each or the sub-ranges in this range. Now use the blocks below to generate 20 random variables from a normal distribution with mean 0 and variance 1. Use the list that you created to count the number of times the random variable falls into each of the sub-ranges. Once you have generated all the random variables plot a bar graph showing the fraction of times that the random variable fell into each of the intervals of interest on the y axis and the value at the center of the sub-range on the x.