Homework 3

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10. d. See the console output for the mean and variance. On one trial my results were: $\mu = 122.71$ and $\sigma^2 = 2.26$

    e. Let N be the number of throws. I wasn't able to find the distribution of N directly, but using Python to plot it and compute the mean, it appears N is approximately distributed as $N(\mu = 35, \sigma^2 = 8.3)$. Now, one sample path sum is the sum of a random number of discrete Uniform random variables on $[1, 6]$. Let X_i be a the result of a single die throw. Thus, $\mathbb{E}(\sum_{i=1}^{N} X_i) = 35 * 3.5 = 122.5$. This is very close to the number computed in 10d.