		Tool used				
	Probability example	A	B	C	D	E
1	**Uniform distribution** – Demonstrate that the uniform distribution which can be generated from built-in libraries conforms to the required properties (plot scatter chart, mean, median, no autocorrelation if generated in sequence etc)					
2	**Galton board simulation** – simulate sum of Bernoulli events to demonstrate correspondence with binomial; demonstrate normal as approximation of binomial function					•
3	**Lognormal** – sample from the normal distribution and demonstrate correspondence between the closed-form mean and variance of the lognormal in terms of the specified mean and variance of the normal distribution. [Consider higher-order moments?]				•	
4	**Poisson simulation** – simulate sum of Bernoulli events to demonstrate correspondence with binomial; demonstrate Poisson as limit of binomial distribution					
5	**Gamma / Exponential [/ Erlang] simulation** – generate [erlang /] gamma distributions as the distribution of nth-arrival times for simulated poisson events, demonstrate the exponential distribution as a special case					•
6	**Negative binomial / Geometric** – simulate a coin toss; demonstrate negative binomial as # heads before # tails, demonstrate the geometric distribution as a special case					
7	**Hypergeometric** – simulate drawing of lots without replacement					
8	**Tweedie distribution** – simulate as the outcome of a compound poisson-gamma process					
9	**Chi-squared / F** – simulate chi-squared as the sum of squares of k normally distributed variables; simulate F as the ratio of the [simulated?] chi-squared. [Show why this distribution is useful for the statistical hypothesis test]					
10	**Student-t** – simulate as the distribution of small sample means taken from a set of normally distributed observations					
11	**Beta** – simulate the updating of parameters as data is observed; eg start with the assumption that a coin is fair, using beta as a prior, then update as simulated observations are made of the results of a coin toss experiment where the coin is biased					
12	**Heavy-tailed distribution** – investigate [tail] properties of Pareto and Weibull distribution					
13	[...]					
14	[...]					

A: Pure Excel spreadsheet
B: Excel spreadsheet plus a simple "looping" macro
C: Pure VBA
D: Python
E: R