All students should read §2.3 of the textbook, **all the questions in this LGA rely on it!**

Students should review the learning goals for the day, determine which are applicable to their questions and provide answers or commentary to their group members. When using the Internet to formulate answers (some questions may require this), keep track of **where** you find your information on the web. You may be asked for, and are expected to have (in Email-able form), URLs supporting your investigations.

The following numbered questions should be split across your group and the solutions discussed during the next lecture period. These are all straight forward, small Monte Carlo simulations:

i. You may use a pRNG provided by your language of choice

ii. You may need to implement your own $Uniform(a,b)$ and $Equilikely(a,b)$ routines (definitions 2.3.3 and 2.3.4).

iii. Use at least $2,000$ replications and 5 distinct seeds when estimating a particular question's $Pr(\mathcal{A})$. Note the words "at least", you need to use as many replications as required to be convinced you have a reasonable estimate of $Pr(\mathcal{A})$.

iv. A picture is worth a thousand words, and a (good) graph is worth a novel. So generate plots similar to Figure 2.3.2 that show the initial "erratic" running averages of $Pr(\mathcal{A})$ up to a point where all 5 seeds are clearly converging to the same smaller interval containing $Pr(\mathcal{A})$.

1. Question 2.3.2 (§2.3.6) except part *c*, unless you're feeling particlarly energetic. In part *b*, clearly state how your answer has been affected your **conceptual**, **specification**, and **computational** parts of your simulation.
2. Question 2.3.5 (§2.3.6), provide graphical evidence and a clear statement of your conclusion for part *b*.
3. Question 2.3.7 (§2.3.6), to be clear, there are many $\mathcal{A}$ events[1] to estimate in this question.
4. Question 2.3.12 (§2.3.6), present your results in graphical form with $0 < a < \rho$ the domain variable. For each a data point, use at least 1000 samples.
5. Question 2.3.14 (§2.3.6)

[1] Shall we say $\mathcal{A}_v$ where v are the possible face values?