Homework 1

Reading: Meester 1.1, 1.2, 1.3, 1.4. Look at the schedule (in Canvas) to see which sections correspond to which upcoming class meeting (roughly).

As needed, please also review the notes: *sets.pdf, counting.pdf, countability.pdf.*

Idea Journal: Don't forget to submit your "idea journal" entries after each class! See the syllabus for details and instructions. This should not take long, but it should be a clear and thorough summary. Upload it to Canvas (using the corresponding link in the Big Idea Journal module). Use whatever format (i.e. handwritten vs. typed vs. writing on tablet) that will give you a nice collection of summaries in the long run.

Problems/Exercises: These problems/exercises are due **Thursday, January 18 by 10pm**. Upload your solutions in PDF to Canvas. At the top of the assignment, include your name, and "Collaborators:......." and list any classmates with whom you collaborated. If you did not collaborate in a significant way with anyone (other than the instructor), just write "Collaborations: None". Remember to present your work neatly and clearly.

1. Meester Exercise 1.1.15

2. Meester Exercise 1.7.2

3. Meester Exercise 1.2.6

4. Suppose that in a class there are 4 students of age 18, 32 students of age 19, and 2 students of age 21. A student is selected randomly to write her age on the blackboard. I ask the class: what is the probability that she writes "21"? One eager student replies, "The set of all outcomes is the set $\{18, 19, 21\}$. Since there are three possible outcomes, the probability is 1/3." What do you think about this? Is this correct? Explain.

5. Suppose you roll two dice (standard 6-sided dice).

   (i) In view of the questions below, how might you define the outcome space Ω to model this experiment?

   (ii) What is the probability that the two dice show different values?

   (iii) What is the probabilty that the sum of the numbers rolled is greater than 8?