Pre-class preparation

Please watch the video:

- Video: Set theory
- Additional optional reading: Section A.1.5 for review of cardinality of sets

Objectives

By the end of the day's class, students should be able to do the following:

- Define the sample space of an experiment.
- Perform and interpret operations (unions, intersections, complements) on sets.

Reflection Questions

Please submit your answers to the following questions to the corresponding Canvas assignment by 9:00AM:

1. Using your own words, describe the difference between **an outcome** and **an event**.
2. Suppose that an experiment's sample space S is the real line. Let the events A and B be represented by the following subsets of S.

   $$A = \{x : 1 \leq x \leq 5\} \qquad B = \{x : x \geq 0\}$$

   Describe each of the following events as a set of real numbers:

   (a) A^c
   (b) $A \cup B$
   (c) $A \cap B^c$ (Note this is not the same as $(A \cap B)^c$)
   (d) $A \cup B^c$
   (e) Define another set C such that $A \subset C$ and $C \subset B$.

3. (Optional) Is there anything from the pre-class preparation that you have questions about? What topics would you like would you like some more clarification on?