Set Properties

- Read carefully pages 111 through 114 (sections 4.5, 4.6)
- Some key questions to answer (try these without looking at the book, but after you've read the book):

  1. State and prove the distributive laws for sets.
  2. State and prove De Morgan's laws for sets.
  3. Prove that if A is a subset of B and C is a subset of D, then $A \times C$ is a subset of $B \times D$.
  4. For sets A, B, C show that $(A \cup B) \times C$ is equal to $(A \times C) \cup (B \times C)$.
  5. For sets A, B, C show that $A \times (B \setminus C)$ is equal to $(A \times B) \setminus (A \times C)$.
  6. For sets A, B, C, how do $A \times (B \cap C)$ and $(A \times B) \cap (A \times C)$ compare?

- Practice problems from section 4.5 (page 116): 4.53, 4.55, 4.57, 4.59
- Practice problems from section 4.6 (page 116): 4.63, 4.64, 4.65, 4.67