# Math 150: HW 8

Due Friday, 6/21 at 1:00 p.m.

**Submit via Gradescope. WebWork HW 8 also due (same time)**

Complete the following problems from the Rosen Text (8th edition). Justify all answers.

- Section 8.1: 8, 12, 26
- Section 8.2: 10, 18, 20

Additional Problems:

1. Given sets $A_1, A_2, \cdots, A_m$, prove that the following definition makes sense (i.e., that it agrees with any possible order in which we take pairwise intersections of the $A_n$ sets). *Hint: Review the class notes where we proved the same result for unions.*

$$\bigcap_{n=1}^{m} A_n = \{x \,|\, x \in A_n \ \forall \ 1 \leq n \leq m\}$$

2. Prove that we CANNOT generally come up with a single set that equals any mixture of unions and intersections of three or more sets in any order (i.e., given any $m \in \mathbb{Z}^+$ and $m > 2$, come up with sets $A_1, A_2, \cdots, A_m$ and some mixture of unions and intersections of them such that we obtain different sets when we move the parentheses around).