# Homework Quiz 1–Sample

1. Decide whether the following statement is true or false. If it is true, give a short explanation. If it is false, give a counterexample.

   *True or false? There is no instance of the Stable Matching Problem for which there is a stable matching containing a pair $(m, w)$ such that $m$ is ranked last on the preference list of $w$ and $w$ is ranked last on the preference list of $m$.*

2. Let $M = \{m_1, m_2, m_3\}$ and $W = \{w_1, w_2, w_3\}$. Give a matching of $M$ and $W$ that is not a perfect matching.

3. What does the $\in$ symbol translate to in English? Hint: for the above problem, $m_1 \in M$ is true but $m_1 \in W$ is false.