1. **(5 points):** Succinctly describe the notion of **canonical form** in the context of meaning representations.

2. **(10 points):** Show an **event-oriented, first order logic** representation for the following example sentence: (don’t worry about how it might be produced; just show what you think the final representation should be.)

   *Jim said that he graded HW3.*

3. **(10 Points):** Give a complete semantic attachment for the verb *grade* as it was used in the last question.

4. **(5 Points):** True or False: Effective **information extraction** systems can be created using finite-state methods.

5. **(5 Points):** What effect do homonymy and polysemy have on the performance of traditional information retrieval systems? Be precise (and concise.)