CIS 770 Homework #10
Due 5:00 pm, April 22

Be ready to discuss problems 3 and 4 on April 9.

1. Prove or disprove: The set of recursive languages over \{0,1\} is closed under intersection.

2. Prove or disprove: The set of RE languages over \{0,1\} is closed under concatenation.

3. Prove that the following language is not RE:

   \[ \{ w \in \{0,1\}^* \mid L(M(w)) \text{ is infinite} \} \]

4. Prove that the following problem is undecidable:

   **Instance:** A CFG \( G \).
   **Question:** Is \( L(G) \) regular?