Problem Set 1

Instructions: Please write out your answers NEATLY AND LEGIBLY on paper. You will lose points if I have to struggle to read your answers!

1. Derive the following theorems of the MIU-system. Write out each derivation in a style similar to the derivation shown in the book on pages 35-36.

   (a) **MIIIIU**
   (b) **MIUUI**
   (c) **MIIUUII**
   (d) **MIUUU**

2. For each of the following MIU strings, derive the string as a theorem <u>OR</u> explain clearly why it is not a theorem.

   (a) **MUI**
   (b) **UMM**
   (c) **MIUU**
   (d) **MIIIII**
   (e) **MIIIIII**

3. For each of the following pq-strings, derive the string as a theorem <u>OR</u> explain clearly why it is not a theorem.

   (a) `--p---q-----`
   (b) `---p----q-------`
   (c) `-p-p-q---`
   (d) `---p--q--`
   (e) `---pq---`