

### HW 3: due Wed, September 30th

Reminder: NO CLASS Mon, SEPT 28 (Jewish Holidays)

Part I: 1. On a special island, every inhabitant is either a knight or a knave. Knights always tell the truth, and knaves always lie. A logician once visited this island and came upon two inhabitants,  $A$  and  $B$ . He asked  $A$ , "Are you both knights?" and  $A$  answered either "yes" or "no" (but I'm not telling you which). The logician thought for awhile, but realized he did not have enough information to determine what they were. The logician then asked  $A$ , "Are you both of the same type?" (Same type means both knights or both knaves) and  $A$  answered either "yes" or "no", and then the logician knew what type each was. What type was each? Explain your answer carefully.

2. On a different island, there are knights, knaves, and normals, where normals sometimes tell the truth and sometimes lie. A logician once visited two inhabitants of this island,  $A$  and  $B$ , where he already knew that one of them was a knight and one of them was a normal, but he didn't know who was who. He then asked  $A$  whether  $B$  was normal, and  $A$  answered him (either "yes" or "no", but I'm not telling you which). He then knew which was which. Which one was the normal? Explain your answer carefully.

Part II: from *Richmond and Richmond* do problems:

Section 1.1 (pp. 7-8): 3abc, 4, 8abcd

Section 1.2 (pp. 19-20): 2acfh, 10, 11

Section 1.5 (pp.38-39): 1bde, 2cde