Exercise 2
Due: August 28

All problems assume all participants are knights or knaves. You must show your work.

1. Show that no one can say “I am a knave.”
2. Show that if A says “I am not the same as B.” then B must be a knave.
3. Assume exactly one person is a knave. Find the knave if:
   (a) A says, “B is the knave.”
   (b) B says, “C is the knave.”
   (c) C says nothing.
4. Assume exactly one person is a knave. Find the knave if:
   (a) A says, “B is the knave.”
   (b) B says, “I am not the knave.”
   (c) C says nothing.
5. Assume exactly one person is a knave. Find the knave if:
   (a) A says, “B is the knave.”
   (b) B says, “A is the knave.”
   (c) C says, “I am the same as A.”
6. Assume that out of three people, at least one must be a knave. Determine if A and B are knights or knaves if:
   (a) A says, “B is a knight.”
   (b) B says, “C is a knight.”
   (c) C says, “A is a knight.”
7. Determine if A and B are knights or knaves if:
   (a) A says, “I am not the same as B”
   (b) B says, “A is a knight”
8. Determine if A, B and C are knights or knaves if:
   (a) A says, “B and C are not the same.”
   (b) B says, “At least one of us is a knight.”
   (c) C says, “B is a knave.”
9. Determine if A, B and C are knights or knaves if:
   (a) A says, “Exactly one of us is a knave.”
   (b) B says, “A is not a knave.”
   (c) C says, “I am the same as A”
10. What do we know for certain if:
    (a) A says, “Exactly one of us is a knave.”
    (b) B says, “A is not a knave.”
    (c) C says, “I am NOT the same as A”