**PHI 169 – Critical Reasoning – Fall 2017 – Asgn. # 1 – Due Aug 30**

## 1  Tell me be about yourself

Let me get to know you a bit. Tell me something you want to share. How did you grow up? What interests your mind? What are you passionate about? What do you fear? What do you dream of? What do you hope? Tell me something you think will help me get to know you a bit. Please also attach a picture so I can associate your name to a face.

## 2  How many Italian and Irish people are there?

Imagine Ellis Island in NYC at the beginning of the 20th century. Lots immigrants are arriving from Europe. There is a room with 1,000 immigrants in which:

(F1)  each of the 1,000 immigrants in the room is either Irish or Italian;

(F2)  at least one of the 1,000 immigrants is Irish; and

(F3)  for any pair of two immigrants randomly selected from the 1,000 immigrants in the room, at least one of the two is Italian.

Determine how many immigrants are Italian and how many are Irish. Motivate your answer.

## 3  Can you color and number the cells in the table?

Draw a table with 4 rows and 9 columns. Please color each cell in the table and assign a 0 or a 1 to each cell. Make sure you satisfy the three conditions below:

(C1)  For any cell $c$ in a given column, there is exactly one other cell $c'$ in another column such that $c$ and $c'$ are filled with the same color. (NB: the expression 'exactly one' means 'at least one and at most one.') Whenever two cells $c$ and $c'$ are colored with the same color, we shall call them *twin cells*.

(C2)  Twin cells must be assigned either both 1's or both 0's.

(C3)  Each column has exactly one cell to which the number 1 is assigned (and thus each column has exactly three cells to which the number 0 is assigned).

If you think that the above coloring and numbering task cannot be done, explain why not.