**Stat 481 - Quiz (03/07/2016) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. What is an experimental study? Any difference from an observational study?

2. (a). A random sample of Facebook users are selected in order to investigate the gender effect and social-economic status effects on political involvement. The number of Facebook political posts per week is collected for each user in the sample over several months randomly. Gender (M, F) and income information (low, medium, high) are recorded as categorical variables.

 i) Is this an experimental or observational study?

 ii) Response variable of interest:

iii) Factor variable (s):

 Treatment levels for each factor:

 (b). Three brands of antidepressant drugs (eg. Brand Alpha, Beta, Gamma) are randomly assigned to a group of patients and then measure the efficacy with self-report satisfactory scores in a likert scale (1(least), 2, 3, 4, 5 (most)).

i) Is this an experimental or observational study?

 ii) Response variable of interest:

iii) Factor variable (s):

 Treatment levels for each factor:

1. What is the purpose of an experimental design experiment in a data study?