

## STA321 Homework 2

1. Depends on students' major.
2. (a) Qualitative variables are measured in ordered or unordered categories while quantitative variables are measured numerically.  
(b) Nominal variables have a scale of unordered categories while ordinal variables have a scale of ordered categories.  
(c) It matters because different statistical analysis requires different type of variables. Some statistical methods only work for quantitative variables, others are designed for qualitative variables.
3. (a) Nominal, discrete. (b) ordinal, discrete. (c) Nominal, discrete. (d) Interval, Continuous. (e) Interval, discrete. (f) Ordinal, discrete. (g) Interval, discrete. (h) Nominal, discrete.
4. We can get a simple random sample of all the first year students. Sample size is 100. And then send them survey emails or make a phone call interview. The potential variables could be Hours on study per week (continuous), Gender (nominal), Age (continuous), GPA in high school (continuous), etc.
5. Problem is that they are asking the same question in different ways. It is not an example of sampling error or non-sampling error.
6. Different answers could be found online.