

Stat 140 - Quiz 1

What's Your Name? _____

The American Time Use Survey (ATUS) is an annual, nationally representative survey of residents of America. A large number of characteristics of the study participants are recorded; here, we will examine just a few of these. The first few rows of the reduced data set are displayed below:

##	id	age	sex	state	employment	education	weekly_earn
## 1	13280	60	male	CA	employed	coll degree	660
## 2	13344	41	female	CA	employed	<coll degree	200
## 3	13352	25	female	CA	employed	coll degree	200
## 4	13848	36	female	GA	unemployed	<coll degree	NA
## 5	14165	50	male	KY	employed	coll degree	NA
## 6	14169	32	female	KY	employed	coll degree	576

1. What is each observational unit in this data set?

2. For each of the following variables, is that variable categorical or quantitative? If it is categorical, is it ordinal or nominal?

- weekly_earn
- state
- education

3. The following table contains counts of how many observational units are in each combination of levels of the employment and education variables, as well as totals for each variable. Use these values to answer the questions below. *In all cases, you can leave your answer(s) as fraction(s); no need to find a decimal representation unless you find that helpful.*

Employment Status	Education Level		Total
	Less Than College Degree	College Degree	
Employed	58296	54700	112996
Unemployed	6618	2102	8720
Total	64914	56802	121716

(a) Calculate the marginal distribution of the employment status variable.

(b) Calculate the conditional distribution of employment status given that the subject's education level is "Less than College Degree".

(c) Calculate the conditional distribution of employment status given that the subject's education level is "College Degree".

(d) Is an individual's employment status independent of their education level? Justify your answer with specific discussion of one or more of your answers to parts (a), (b), and (c)