Practice Quiz 1
G572
Spring 2023

The quiz will be 10 questions (numerical, true/false, multiple choice). I recommend when taking the practice quiz, also coming up with a "why?" answer where relevant, even though those kinds of questions won't be asked on the quiz.

Practice questions:

1. Experimental data will never include information gathered during interactions with people in their everyday lives. (T/F)

2. Given the following output, how many standard errors away from a (correlational) effect of 0.0 is the (correlational) effect of Age on SickTime (holding education and tenure fixed)? (round to the nearest one-tenth)

```
. reg SickTime Education Age TenurewithFirm
```

Source	SS	df	MS	Number of obs	=	8,093
				F(3, 8089)	=	3323.73
Model	82746.9846	3	27582.3282	Prob > F	=	0.0000
Residual	67127.3728	8,089	8.29859967	R-squared	=	0.5521
				Adj R-squared	=	0.5519
Total	149874.357	8,092	18.5212997	Root MSE	=	2.8807

SickTime	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
Education	.0013832	.0159338	0.09	0.931	-.0298512	.0326176
Age	.1501507	.0029555	50.80	0.000	.1443571	.1559442
TenurewithFirm	.2992801	.0061051	49.02	0.000	.2873126	.3112476
_cons	7.198536	.2715687	26.51	0.000	6.666192	7.730881

3. Given the following output, at a 95% confidence level, would you reject the null hypothesis for the coefficient on Education?

```
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```

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4. A random sample ensures our estimate of the causal impacts of X1 on Y will be unbiased.
    a. True
    b. False

5. The standard error estimates the standard deviation of which of the following:
    a. The population
    b. The sampling distribution
    c. Both of the above
    d. None of the above

6. For a given population (with variance > 0) of hours salespeople spend making calls per day, compared to a sampling distribution for sample means of sample size 25, a sampling distribution of sample size 125 will definitely:
    a. Have the same standard deviation
    b. Have a lower standard deviation
    c. Have a higher standard deviation

7. If we reject the null hypothesis (let's say using a 99% confidence level) that the true population mean of daily profits for companies in Indiana is $10,000, it means we have proven that $10,000 is not the true population mean. (T/F)

8. An R-squared above 0.9 implies that coefficient estimates can be interpreted as causal effects. (T/F)

9. Suppose Kroger offers a discount to some customers and not to others. If they wanted to conduct a hypothesis test on the outcomes for these two groups (we can do other types of analysis), which type of hypothesis test would they want to conduct?
   - **a.** Single sample hypothesis test
   - **b.** Difference in means hypothesis test

10. What is typically the null hypothesis for a two sample t test? (numerical answer, but definitely consider the “why?” here)