To earn full credit for Journal 9, you must choose one of the following options.

Option 1

Read the "The ASA Statement on p-Values: Context, Process, and Purpose" article from the academic journal *The American Statistician*, and the "An unhealthy obsession with p-values is ruining science" from Vox (links and PDFs available on Moodle).

1. The concept of p-values is so basic, it is often one of the first topics people encounter in an introductory class or one of the only things people remember from their statistics classes. Does your opinion of p-values and how we use them change after reading this article?
2. The ASA statement specifically mentions some types of bad statistical practices. Can you identify any others that you may have heard of from other places? How can you personally commit to good statistical practice, even after this class is finished?

Option 2

Read the "This mathematical formula shows that all-male panels are sexist" article from Quartz (link and PDF available on Moodle).

1. The statistical probability analysis in the article is, in fact, a hypothesis test. Name all of the ingredients of the hypothesis test (null and alternative hypotheses, assumptions and conditions, test-statistic, p-value, decision, and interpretation) that you can find as written in the article. If you see additional concepts we have talked about (such as an observed value, like $\hat{p}$), you can include those as well. **No need to perform any additional calculations or use mathematical language**–if you'd like to describe the concepts using words, feel free!
2. Can we generalize the results of this calculation to the wider population of male mathematicians? Why or why not?

Option 3

Read the "In surprise turnaround, new analysis finds an Alzheimer's treatment may work" article from the Washington Post (link and PDF available on Moodle).

1. If Biogen was trying to prove that the drug can effectively reduce cognitive decline in patients with early Alzheimer's disease, what would the null and alternative hypotheses have been? Do you think the test was one- or two-sided?

   Note: You do not have to use mathematical typesetting! It is fine to write the hypotheses out in words.
2. When the independent monitoring board initially declared the drug as "offering little hope of success," what decision were they making (reject, fail to reject)? Given that the drug may actually be effective, what type of error were they making?
3. Please give your thoughts on the remainder of the article–do you feel it does a good job of communicating statistical results? Why or why not?

Option 4

Read the "In a major setback, Merck to stop developing its two Covid-19 vaccines and focus on therapies" article from STAT (link and PDF available on Moodle).

1. What decision was Merck making (reject, fail to reject)?
2. What are some of the pros and cons to making this decision? Do you feel like the correct decision was made?
3. Please give your thoughts on the remainder of the article–do you feel it does a good job of communicating statistical results? Why or why not?

Option 5

Find a news article that relates to a topic we discussed in class and write a brief paragraph on why you think it relates to this week's material.