

**ECO 230: Business and Economics Research**

**Instructor: Dr. James Murray**

**Name: (2 points)** \_\_\_\_\_

**Practice Exam 1**

**Directions:** Write your answers in the space provided. Please include the following in every answer:

- Write down the one line of code that produced the output needed to answer the question.
- Report what statistical test or procedure you are using to answer the question. For every hypothesis test, be sure to include every step of hypothesis testing.

The dataset `jobsat.RData` includes the following variables related to job satisfaction for Jewish public workers:

- **Satisfaction:** ratio scale, measure of overall job satisfaction
- **Supervision:** ratio scale, a measure of how satisfied an employee is with their supervisor
- **Promotion:** ratio scale, a measure of how satisfied an employee is with their opportunities for promotion
- **Married:** Binary variable equal to 1 if person is married, 0 otherwise.

Answer the following questions regarding **overall job satisfaction** and **marital status**.

1. (7 points) Report and interpret a 95% confidence interval for the mean level of satisfaction.
2. (7 points) Is there evidence that the median level of job satisfaction is different for married employees versus employees that are not married?

3. (7 points) Report the mean level of job satisfaction for married employees and unmarried employees. Report and interpret a 95% confidence interval for the difference between job satisfaction between married and unmarried employees.
  
4. (7 points) Is there evidence that the mean level of job satisfaction for married employees is greater than 64?
  
5. (7 points) Report and interpret a 95% confidence interval for the mean level of job satisfaction for married employees.
  
6. (7 points) Report and interpret a 95% confidence interval for the interpolated median level of job satisfaction for all employees.

Answer the following questions regarding **promotion satisfaction** and **supervision satisfaction**

7. (7 points) Is there evidence that the median level of promotion satisfaction is different than supervision satisfaction?
8. (7 points) Report the mean levels of promotion satisfaction and supervisor satisfaction. Which of these two dimensions of workplace satisfaction is higher?
9. (7 points) Report and interpret the 95% confidence interval for the mean level of supervision satisfaction.
10. (7 points) Report and interpret the 95% confidence interval for the difference between the mean promotion satisfaction and supervision satisfaction.

