

## Final Exam – Part 2

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### Murderous Poverty

The table below shows the output of a linear model annual murders per million (annual\_murders\_per\_mil) from percentage living in poverty (perc\_pov) in a random sample of 20 metropolitan areas.

- a. Write the equation of the regression line. Interpret the slope and intercept in context.
- b. What are the hypotheses for evaluating whether the slope of the model predicting annual murder rate from poverty percentage is different than 0?
- c. What are the degrees of freedom of the test statistic?
- d. State the conclusion of the hypothesis test from part (b) in context of the data. What does this say about whether poverty percentage is a useful predictor of annual murder rate?
- e. Calculate a 95% confidence interval for the slope of poverty percentage, and interpret it in context of the data.