

Name \_\_\_\_\_

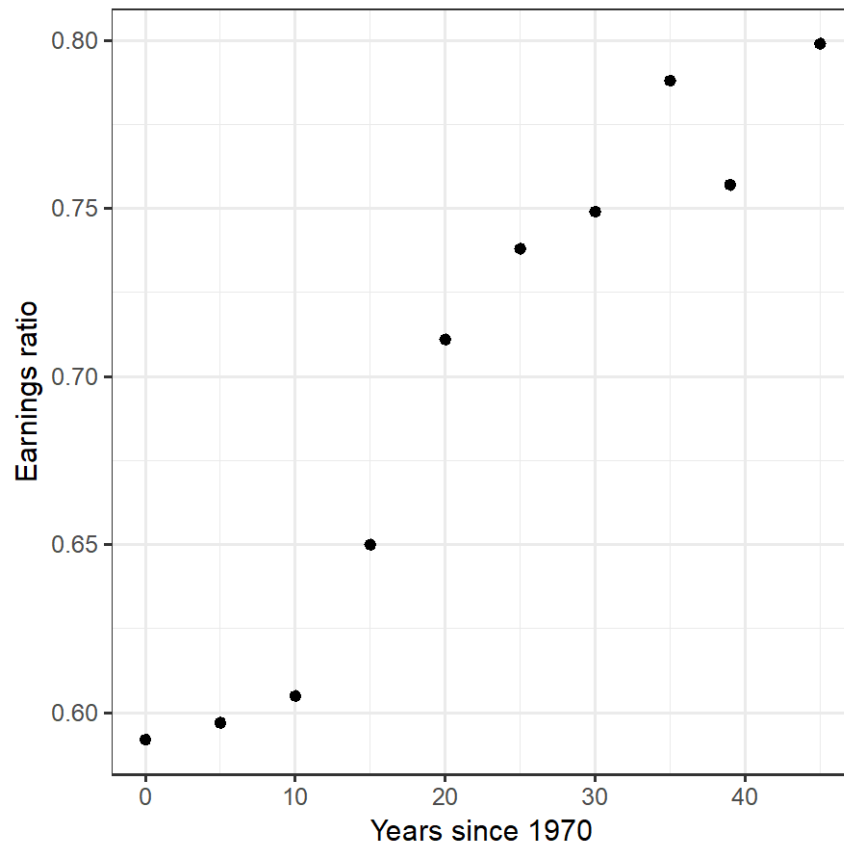
**Investigation 7: Are Gender and Pay Related? Continued**  
**Worksheet 7.1 Fitting a Line to Data**

**Statistical Question** \_\_\_\_\_

**Collection of Data**

Years since 1970	Median Income Men (\$)	Median Income Women (\$)	Earnings ratio
0	9,184	5,440	0.592
5	12,934	7,719	0.597
10	19,173	11,591	0.605
15	24,999	16,252	0.650
20	28,979	20,591	0.711
25	32,199	23,777	0.738
30	38,891	29,123	0.749
35	42,188	33,256	0.788
39	49,164	37,234	0.757
45	50,119	40,022	0.799

**Analyze the Data**



1. Using a straightedge, draw a line the on the scatter plot you think will summarize or fit the data. Explain how you decided to draw your line.
2. Locate two points on the line. Write each point as an ordered pair.
3. Using the two points, write the equation of your line in slope-intercept form.
4. Interpret the slope of your line in terms of the context.
5. Interpret the y-intercept in terms of the context.
6. Using 25 years from 1970 as your x value and the equation of your line, what is your prediction for the earnings ratio?
7. Look at the data table to find the actual earnings ratio of 25 years from 1970.
8. What is the difference between the actual earnings ratio for 25 years from 1970 and the earnings ratio your line predicted?
9. How well did your line predict the earnings ratio for 25 years from 1970? Did your line overestimate or underestimate the earnings ratio?
10. Compare your prediction with others in class. Who was the best predictor of the earnings ratio for 25 years since 1970?

**Interpret the Results in the Context of the Original Question**

11. Talk with a partner and then write a paragraph to answer the statistical question based on the analysis that refers to the residuals.  
Optional: What might be some social implications of the results?

12. When is the earnings ratio predicted to be 1? Do you think this will happen?