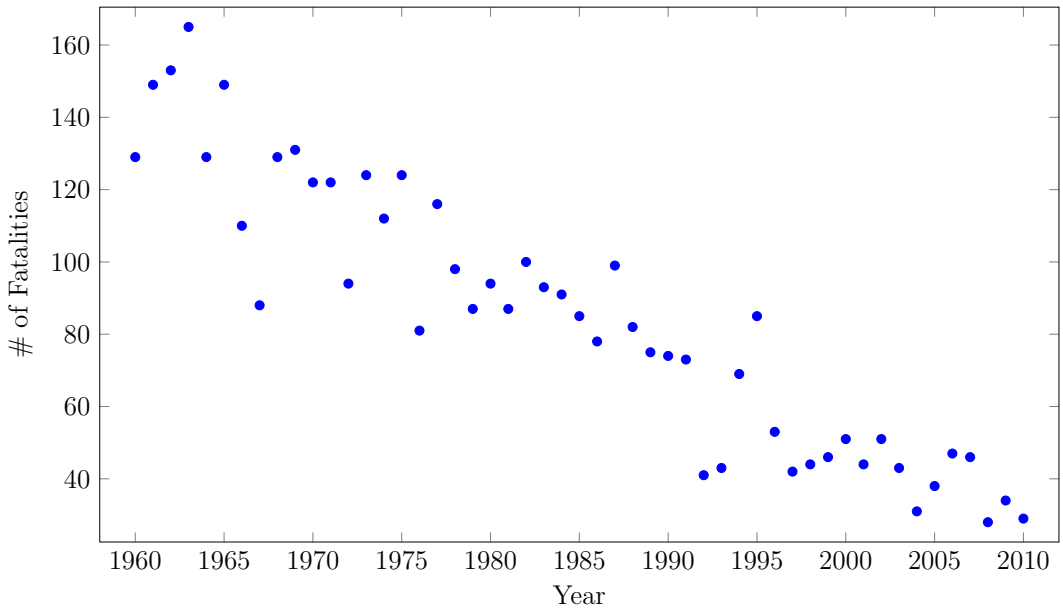
Linear Regression and Lightning Strikes **Math 121 - Workshop**

Over the last 50 years there has been a dramatic decline in the number of fatalities (per year) due to lightning strikes in the United States. Here a graph of the data:



This data has $N = 51$, $\bar{x} = 1985$, $\bar{y} = 84.5$, $s_x = 14.9$, $s_y = 37.3$, and $r = -0.9355$.

1. Find an equation for the least squares regression line.

2. According to the regression line, how many people should have been killed by lightning in the year 2000?

3. Add the regression line to the scatterplot above by plotting two points on the line, and then using the two points as a guide for the rest of the line.

4. According to the least squares regression line, about how much is the number of fatalities per year decreasing every year?

5. If we follow the trendline into the future, in what year will the number of lightning fatalities be zero?

6. Do you believe that no one in the U.S. will be killed by lightning in that year? Why or why not?