

Least-Square Regression Line Project

CA Standards:

12.0 Students find the line of best fit to a given distribution of data by using least squares regression.

1. What is the explanatory variable?
2. What is the response variable?
3. Data (min. 10 data points)
4. Draw a scatter plot with the least square regression line.
5. Find the equation of the least-square regression line.
6. Find the correlation. Is the correlation strong?
7. Use the equation $a = r \frac{s_y}{s_x}$ to verify the slope. Interpret the slope.
8. Use the equation $b = \bar{y} - a\bar{x}$ to verify the y-intercept. Interpret the y-intercept.
9. Predict a response variable value (y) by asking someone's explanatory variable value.
10. Find the residuals to your data and use a 3 column table to record it.
11. Draw a residual plot, interpret the plot
12. Find the coefficient of determination, and what does it mean?
13. Conclusion.