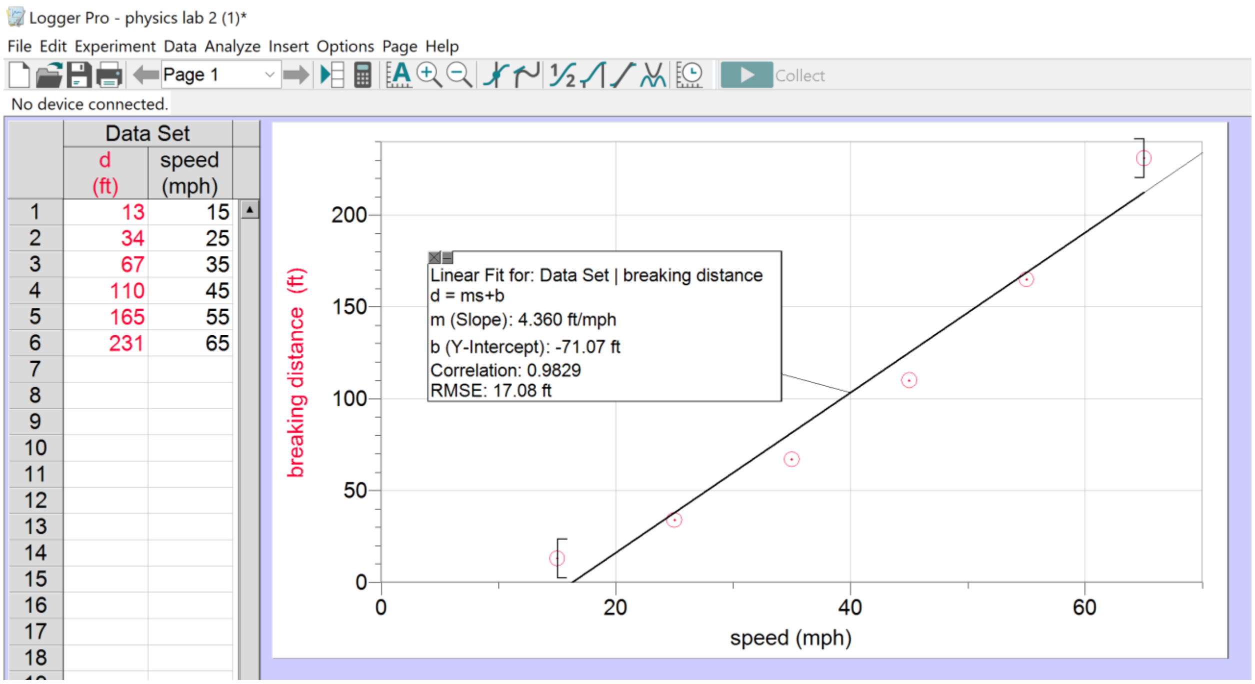
3. Determine if there is a relationship between the speed of a car and its braking distance at that speed, based on the following dataset:

Speed (mph)	Braking distance (ft)
15.00000	13.000
25.00000	34.000
35.00000	67.000
45.00000	110.000
55.00000	165.000
65.00000	231.000



The linear regression equation based on the slope and intercept can be written as:

Braking Distance=4.360×Speed−71.07

This equation suggests that for each additional mph in speed, the braking distance increases by approximately 4.360 feet. The y-intercept, -71.07 feet, represents the estimated braking distance when the speed is 0 mph.

The correlation coefficient of 0.9829 indicates a very strong positive linear relationship between the speed of the car and its braking distance. A correlation coefficient close to 1 signifies that as the speed increases, the braking distance also increases in a nearly linear fashion. Also, The RMSE of 17.08 feet provides a measure of the average distance between the observed braking distances and those predicted by the model. Lower RMSE values indicate a better fit of the model to the data.

In conclusion, There is a strong linear relationship between the speed of a car and its braking distance, as evidenced by the high correlation coefficient and the regression analysis. The equation of the line of best fit allows for the prediction of braking distances based on given speeds, and the RMSE indicates that the model predictions are reasonably close to the observed values.