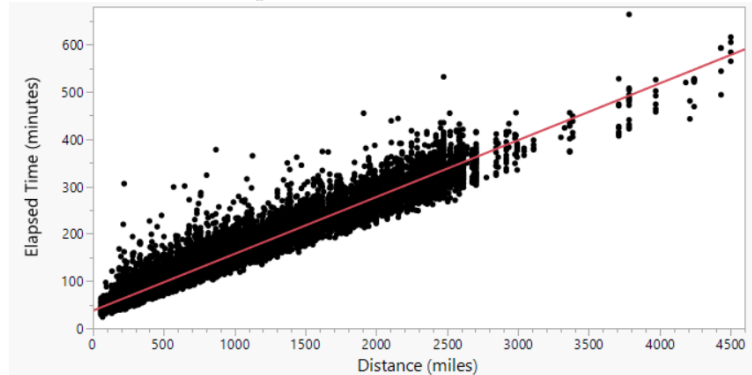


If you have group members who collaborated but were not logged into the Zoom session, please note in the submission comments how they collaborated on the learning activity.

A major airline wishes to determine if it can predict the elapsed time of a flight delay in minutes, y , using the distance of the flight to the destination in miles, x . Simple linear regression was performed in JMP for a large sample of 29,009 delayed flights gathered during the previous year. (See the JMP dataset `Airline Delays.jmp`.) Use the output below to answer the questions in this Learning Activity.

Scatter Plot of Elapsed Time vs. Distance



Summary of Fit				
RSquare				0.940049
RSquare Adj				0.940047
Root Mean Square Error				18.71175
Mean of Response				139.3205
Observations (or Sum Wgts)				29009
Lack Of Fit				
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	159251715	159251715	454836.3
Error	29007	10156214	350.12976	Prob > F
C. Total	29008	169407929		<.0001*
Parameter Estimates				
Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	37.457047	0.186769	200.55	<.0001*
Distance	0.1201603	0.000178	674.42	<.0001*

- Write the equation for the **least squares regression line** in terms of x and \hat{y} , where x = distance of the flight (in miles) and \hat{y} = estimated elapsed time of the delay (in minutes).
- Interpret the **slope** of the estimated regression equation in context of the problem.
- Is there a valid interpretation of the **y -intercept** in context of the problem? If so, interpret the y -intercept. If not, explain why.
- Interpret the **standard error** of prediction found by your regression analysis. Include units.