

Name: \_\_\_\_\_

Date: \_\_\_\_\_

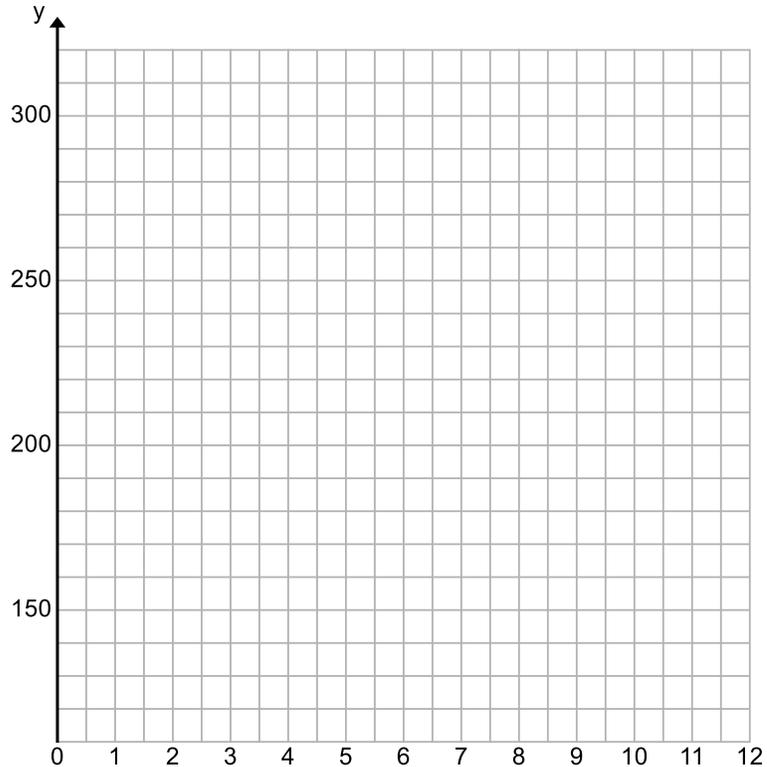
**12.6-12.7 HW: Quantifying Predictability and Linear Regression**

Algebra 1

1. The table below shows the number of gallons of gasoline needed to fill the tank of a car and the number of miles driven since the previous time the tank was filled.

<b>Gallons of gasoline (x)</b>	7.8	8.5	7.6	9.4	8.3	10.5	8.7	9.6	4.3	6.1
<b>Miles driven (y)</b>	235	255	230	295	250	315	260	290	130	180

- (a) Create a scatterplot for this data set on the grid provided. Draw a best fit line through the scatterplot.



- (b) Determine the correlation coefficient (*rounded to the nearest thousandth*) and explain what it suggests in the context of the data.

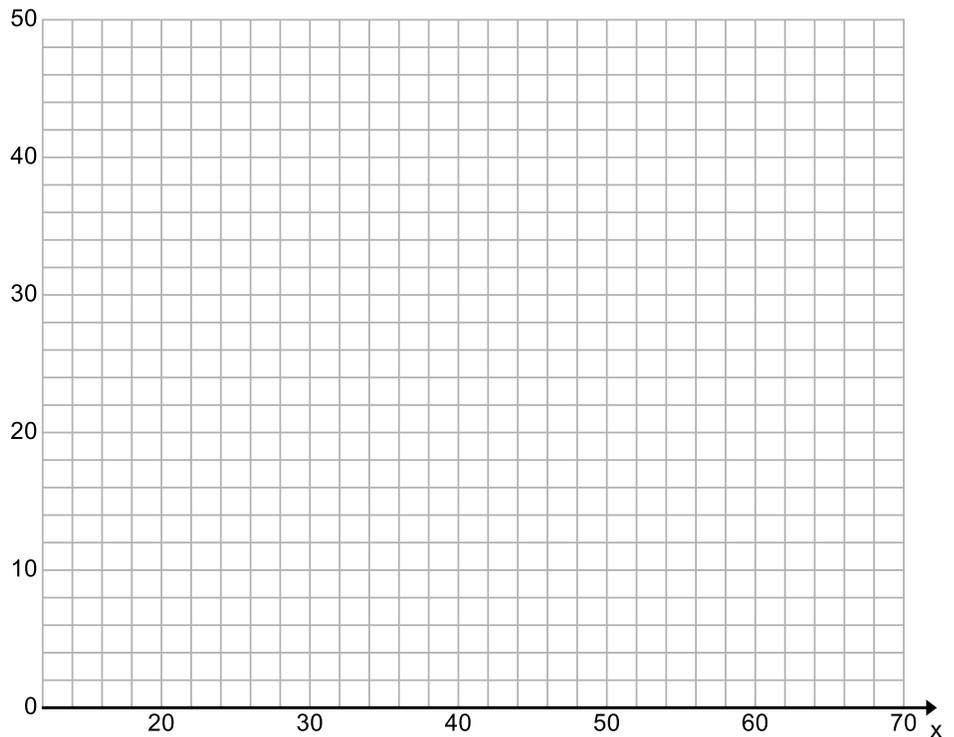
- (c) Determine the equation for the best fit line for this data set. Round the slope and the y-intercept to the nearest tenth.

- (d) Use this equation to predict the number of gallons of gasoline that should be needed to travel 400 miles. Round your answer to the nearest tenth of a gallon.

2. An insurance agent is studying the records of his insurance company looking for a relationship between age of a driver and the percentage of accidents due to speeding. The table shown below summarizes the findings of the insurance agent.

<b>Age of driver (x)</b>	17	18	21	25	30	35	40	45	50	55	60	65
<b>Percent of Speeding Accidents (y)</b>	49	49	48	39	31	33	24	25	16	10	5	6

- (a) Create a scatterplot for this data set on the grid provided. Draw a best fit line through the scatterplot.



- (b) Determine the correlation coefficient (rounded to the nearest thousandth) and explain what it suggests in the context of the data.

- (c) Determine the equation for the best fit line for this data set. Round the slope and the y-intercept to the nearest tenth.

- (d) Use this equation to predict what percent of speeding accidents are caused by 32 year olds. Round your answer to the nearest whole number.