9.2B EQUATIONS OF LINES OF BEST FIT

1. Write an equation of the line fit by following the process below.

   a. Pick 2 nice points on the line.

   b. Find the slope \( m \) by counting the boxes or using the formula
      \[ \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{y_1 - y_2}{x_1 - x_2}. \]

   c. Find the \( y \)-intercept \( b \). Remember this is where the line crosses the \( y \)-axis.

   d. Plug the numbers into the equation \( y = mx + b \).

2. The scatterplot shows the weights of an infant from birth through \( x \) months.

   a. At what age did the infant weigh 11 pounds?

   b. What was the infant’s weight at birth?

   c. Draw a line of best fit.

   d. Write an equation of the line of best fit.

   e. Use the equation to predict the weight of the infant at 18 months.

   f. Does the data show a positive, a negative or no relationship?
3. The table shows the number of losses a gamer has for a number of weeks after getting a new video game.

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Losses</td>
<td>15</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

a. Identify the independent variable.
b. Identify the dependent variable.
c. Make a scatterplot of the data.
d. Draw a line of best fit.
e. Write the equation of the line of best fit.

4. The scatterplot shows the cost of bottles of juice.

a. How much does a gallon of juice cost?
b. How many fluid ounces of juice can you purchase for $3?
c. Draw a line of best fit.
d. Write an equation of the line of best fit.
e. Use the equation to predict the cost of a 256-fluid ounce container of juice.
f. Does the data show a positive, a negative or no relationship?