Stat 252 Winter 2017

Quiz 14: Linear regression
(taken on Thur Feb 16)

You may work with in a group of as many as three students on this quiz, handing in one quiz with all names, provided that you all contribute to the work. You may use your notes.

Two Cal Poly freshmen gathered data on a random sample of textbooks from the campus bookstore in November of 2006. They wanted to predict the price of a textbook from its number of pages. Some summary statistics for these data appear below:

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pages</td>
<td>464.53</td>
<td>287.08</td>
<td>0.823</td>
</tr>
<tr>
<td>Price</td>
<td>65.02</td>
<td>51.42</td>
<td></td>
</tr>
</tbody>
</table>

1. Use this output to calculate the intercept and slope of the least squares regression line for predicting price from number of pages. (Show your work.)

2. Report the equation of this line, being sure to use good statistical notation.

3. Use the least squares line to predict the price of a 500-page textbook. Then do the same for a 1500-page textbook.

4. Which prediction from #3 would you have more confidence in? Explain.

5. Report the value of the slope coefficient, and interpret what it means in this context.