**Example:** Let $x$ be the average number of employees in a group health insurance plan, and let $y$ be the average administrative cost as a percentage of the claims. Data source: *Domestic Affairs*

<table>
<thead>
<tr>
<th>$x$</th>
<th>3</th>
<th>7</th>
<th>15</th>
<th>35</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>$y$</td>
<td>40</td>
<td>35</td>
<td>30</td>
<td>25</td>
<td>18</td>
</tr>
</tbody>
</table>

a. Make a scatter diagram. Draw the line that you think best fits the data.

> **Calculator Tip:**
> 1. Put the $x$ values in L1
> 2. Put the $y$ values in L2
> 3. 2nd STATPLOT – turn PLOT1 ON.
> 4. ZOOM – 9:ZSTAT
b. Would you say the correlation is low, moderate, or strong? Positive or negative?

➢ Calculator Tip:
1. To compute $r$, do the following (only once): ON – CATALOG – DIAGNOSTICON and hit enter twice.
2. Enter the data in L1 and L2 as above. Then STAT – CALC – 8:LinReg(a+bx) will give you the value of $r$.
3. To find the sums for the two-variables, enter the data in L1 and L2. Then STAT – CALC 2:2-VAR Stats

c. Use a calculator to verify that $\sum x = 135, \sum x^2 = 7133, \sum y = 148, \sum y^2 = 4674,$ and $\sum xy = 3040$. Compute $r$. As $x$ increases from 3 to 75, does the value of $r$ imply that $y$ should tend to increase or decrease? Explain.