General Principle :
Formatting is NOT Rounding

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Formatting Example

A5 =SUM(A1:A3)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>3.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>1.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.11</td>
</tr>
</tbody>
</table>
Look Carefully at the Formatting Example

• It *appears* to say that the sum of
  
  3.05  
  2.02  
  1.03  

  is 6.11

• That is not mathematically correct!

• The next slide shows what is actually in each cell. (Control / ~)
Formatting Example with Control / ~
What happened?

• What happened is that the cells in column ‘A’ were formatted to show only 2 digits after the decimal point.
• However, the numbers in column ‘A’ actually had more than 2 digits after the decimal point. The last digits were “hidden”.
• Hiding some of the digits can yield results that appear to be wrong.
Rounding Example
Rounding Example with Control / ~

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.054</td>
<td>=ROUND(A1,2)</td>
</tr>
<tr>
<td>2</td>
<td>2.024</td>
<td>=ROUND(A2,2)</td>
</tr>
<tr>
<td>3</td>
<td>1.034</td>
<td>=ROUND(A3,2)</td>
</tr>
</tbody>
</table>

=SUM(B1:B3)
Rounding Example

- The addition in column ‘B’ is now mathematically correct.
- The value that appears in cell B5 is in fact the sum of the numbers appearing in cells B1:B3
Warning!

• The values *displayed* by a computer application are often not the values that are *used* inside that application.

• If you need a value that has only a certain number of digits after the decimal place, you must *round* that value, not merely *format* it.