Discussion section

<table>
<thead>
<tr>
<th>Year</th>
<th>Cancer Deaths in U.S.</th>
<th>New Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>331,000</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>462,000</td>
<td></td>
</tr>
</tbody>
</table>

Direct comparison of 462,000 & 331,000 isn't meaningful, for several reasons:

1. Overall U.S. population over time

2. Ways to compare numbers

   1. Absolute:
      \[ 462,000 - 331,000 = 131,000 \]
      Lower were 131,000 more cancer deaths in U.S. in 1985 than in 1970

   2. Relative:
      \[ \frac{462,000 - 331,000}{331,000} = \text{New/Year} \]
3 is what % bigger than 2?

\[ 50\% = \frac{3-2}{2} \]

The number of cancer deaths in U.S. in 1985 was 39.6% higher (larger) than the corresponding number in 1970.

we think that U.S. population growth from 1970 to 1985 was (a lot) smaller than 40%.

so only some of the increase from
331,000 in 1970 to 462,000 in 1985 can be attributed to population growth.

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>205,100,000</td>
</tr>
<tr>
<td>1985</td>
<td>237,500,000</td>
</tr>
</tbody>
</table>

\[
\frac{237,500,000}{205,100,000} \times 100\% = 116\%
\]

Correct conclusion:
That cancer killed someone might have increased from 1970 to 1985.

Better measure:
5-year remission (or survival) rate.
$\sum_{i=1}^{3} 1 = 1 + 1 + 1 = 3$

(iii) $\sum_{i=1}^{n} 1 = 1 + 1 + \ldots + 1 = n$

$\sum_{i=1}^{5} i = 1 + 2 + 3 + 4 + 5 = 15$

(IV) $\sum_{i=1}^{n} (\gamma_i + c) = (\gamma_1 + c) + (\gamma_2 + c) + \ldots + (\gamma_n + c)$

$= (\gamma_1 + \gamma_2 + \ldots + \gamma_n) + (c + c + \ldots + c)$

$= \left(\sum_{i=1}^{n} \gamma_i\right) + nc$