Discussion

Section 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Cancer deaths (Y)</th>
<th>2 yrs to compare</th>
<th>Old number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>331,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>462,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. (Absolute)

\[(Y_{\text{new}} - Y_{\text{old}}) = 462,000 - 331,000\]

\[= 131,000\]

In 1985 in US, there were 131,000 more cancer deaths than in 1970.

2. (Relative)

\[\frac{Y_{\text{new}} - Y_{\text{old}}}{Y_{\text{old}}} = \frac{131,000}{331,000} = \frac{131}{331} = 0.395277039\ldots\]

Significant figure (siffigs)

\[131,000 \text{ has only } 3 \text{(siffigs)}\]

\[\frac{131}{3} = 0.396 \approx 39.6\%\]
From 1970 to 1985, the number of cancer deaths in the U.S. went up by 39.6%.

\[
\frac{y_{1985} - y_{1970}}{y_{1970}} = \frac{-131,000}{462,000} \approx -0.284 \approx -28.4\%
\]

We think that U.S. pop. didn't rise anywhere near as fast as 39.6% from 1970 to 1985;
Therefore some, but not all, of the 39.6% increase is just from population growth.

Q: How could #cancer deaths/year go up even if treatment is improving?


\[
\text{\#cancer deaths} \quad / \quad \text{\#cancer patients} = 5\text{-year survival rate}
\]

\[\text{\#access to good health care may change over time}\]
### Basic Data Set

- **Example:**
  - **Litter Size:**
    - Fox x 5

### Sample

- The observed individuals
  - 1 row for each individual
  - Sample size

### Quantitative Data

<table>
<thead>
<tr>
<th>Foxes</th>
<th># Foxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**391**

<table>
<thead>
<tr>
<th>Foxes</th>
<th>6 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

- **Rows** for each
- **Litter**

**Note:**
- Quantitative, discrete, dichotomous
3(d)

kind:
turtle
skate
turtle
bird

1 row for each animal

quant. continuous

phosphate concentration
0.722
-0.48
0.031

4 rows for each stream location

qual. not dichotomous

nominal & no ordering in possible values