Discussion Section 1

year	# cancer deaths (Y)
1970	331,000
1985	462,000

2 ways to compare numbers:

① (absolute)

$(Y_{new} - Y_{old}) = 462{,}000 - 331{,}000$

$= 131{,}000$

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

② (relative) comparison #1

$\frac{Y_{new} - Y_{old}}{Y_{old}} = \frac{+131{,}000}{331{,}000}$

$= \frac{131}{331}$

significant figures (sfs)

131,000 has only 3 (sfs)

$= 0.39577039..$

$..2749245$

$0.0\underbrace{131}_{3\text{ sfs}}000$

$\doteq 0.396 \doteq 39.6\%$

from 1970 to 1985, # cancer deaths in U.S. went up by 39.6%

relative comparison #2

from 1985 to 1970, # cancer deaths in U.S. went down by 28.4%

$$\frac{y_{old} - y_{new}}{y_{new}} = \frac{-131,000}{462,000}$$

$$= -\frac{131}{462}$$

$$\doteq -0.284$$

$$= -28.4\%$$

year	# cancer	U.S. p.p.
1970	331,000	?
1985	462,000	?

we think that U.S. p.p. 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 ↑ up even if treatment improving?

A: U.S. pop. is aging & cancer incidence is prevalence with age

A2: we're better at finding cancer & correctly attributing cause of death

$$\frac{\#\text{ cancer deaths}}{\#\text{ cancer patients}} \uparrow$$

5-year survival rate

→ access to good health care may change over time

basic data set

ex. litter size in fox's

sample
the observed individuals

1 row for each individual

n

sample size

1 column for each variable measured on the individuals

#foxes
2
7
4
⋮

1 row for each litter

quant. discrete

3(a)

	6 or more?	#foxes
0	no	2
1	yes	7
0	no	4
⋮	⋮	⋮

1 row for each litter

need legs

informative than #foxes

quant. discrete dich.

qual.

3 (b)

3(c)

phosphate concentration

0.722

~~1.448~~

0.031

n = 60

1 row for each stream location

kind

turtle

snake

turtle

bird

1

1

1 row for each animal

quant. continuous

qual. not dichotomous

nominal ← no ordering in possible values