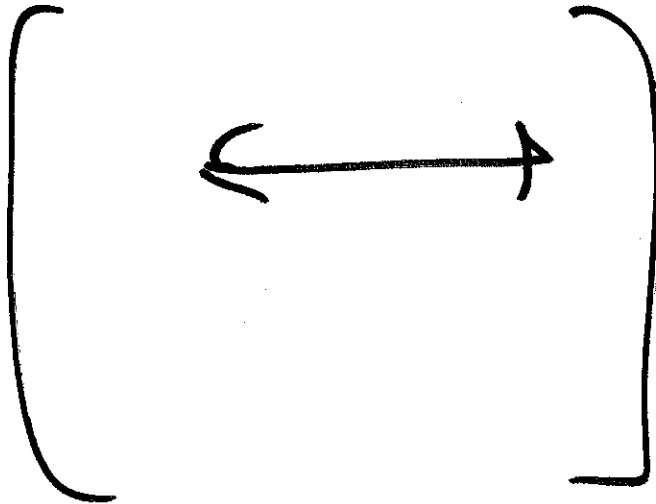


Discussion section 1

AM57
28 Sep 09

1 column for each variable



↑ ①
1 row for each subject
↓

1.9.

2 ways to compare numbers:

(a) Absolute: Y_{new} vs. Y_{old}

$$Y_{new} - Y_{old} = 462,000 - 331,000 = +131,000$$

(b) relative:

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

3 sig figs
↓

there were 40% more us cancer deaths in 1985 than in 1970

$$40\% \div 39.6\% = +0.396 = +0.39577039$$

not fair to compare 46200 & ②
33100 directly because of popula-
tion growth, but US pop. almost
certainly didn't go up by 40% in
15 years, so: some but not all of
that 40% rise could be attributed
to pop.

other possible factors:
cancer detection has

probably improved

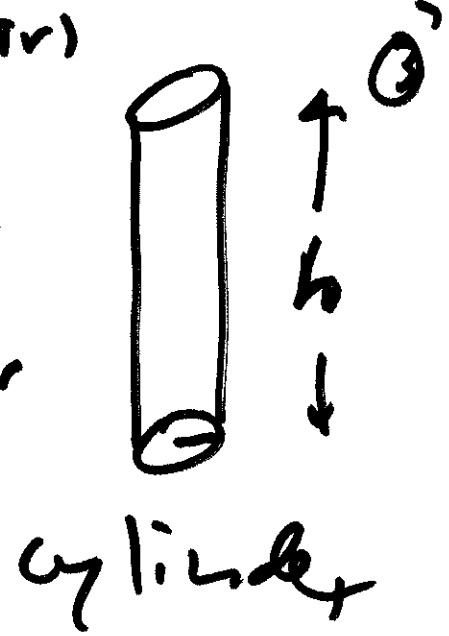
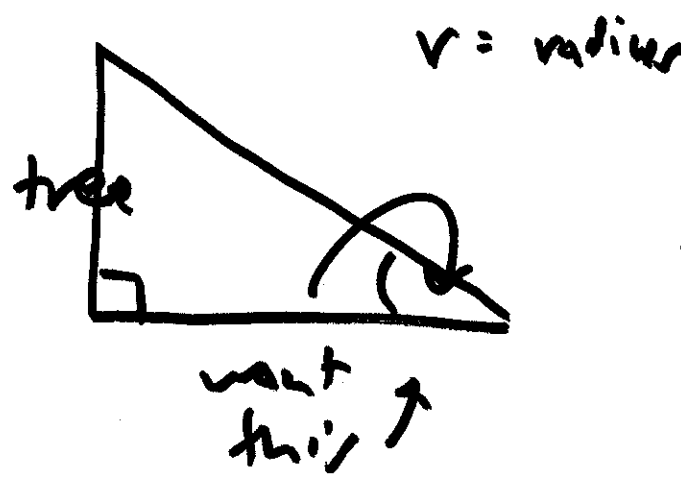
a better

variable: % of people in
remission 5 yrs. after

diagnosis

1(b) (cheapest) (2πr)
 • circumference
 (at or near base)

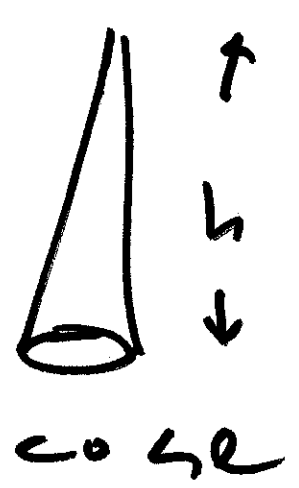
• height



• volume (V)
 (most expensive)

cylinder: $V = \pi r^2 h$

cone: $V = \frac{1}{3} \pi r^2 h$



1c

- commute distance
- location / (urbanicity) v. rural
- cost of living
- public services
- quality of schools
- property value

to pick best city you need[ⓐ]
 to elicit from yourself your
 values (which var. are
 more important): utility
function

ⓐ short term effects of
 digestive illness:
 ↓ weight
 $\gamma_{\text{after}} - \gamma_{\text{before}}$ weight?
 (yes)

γ_{before} weight
 height? (40) height

ⓑ

39 beats	60 sec	= 78 beats/min
30 sec	1 min	

(yes)

$80 \text{ beats} \quad | \quad 60 \text{ ~~sec~~ } \quad = \quad 7\frac{1}{2} \text{ beats/min}$
 $65 \text{ ~~sec~~ } \quad | \quad 1 \text{ min} \quad \uparrow$

is approximately equal to

this measurement likely to be more accurate since it's based on more data (65 sec vs. 30 sec.)

mean of y

$$\frac{y_1 + y_2 + \dots + y_n}{n}$$

$$= \frac{1}{n} (y_1 + y_2 + \dots + y_n)$$

y	
y_1	1
y_2	2
\vdots	\vdots
y_{n-1}	$n-1$
y_n	n

sample size

$$= \frac{1}{5} \sum_{i=0}^{(5)} \gamma_i$$

capital rights

↑
index of summation

$$\sum_{i=1}^3 1 = \textcircled{6}$$

$$1 + 1 + 1 = 3$$

$$\sum_{i=1}^5 1 = \underbrace{1 + \dots + 1}_5 \text{ times} = 5$$

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