A2: approximate

SD 0.3 cm

3.56 4.0 cm

empirical rule (part 2)

standard normal curve

68%

-1 0 +1 (z)

1.00 total:

1587 = deciles

15.87% = 16%

84%

16% 50%

16%

-1 0 +1

butterfly wing length

exact A1: $\frac{L}{24} = 8.3%$
3.56 cm - 4.0 cm = \# - mean
0.3 cm
SD = \frac{Y - \bar{Y}}{S}
= \frac{-0.44}{0.3} = -1.47

Experimental: there is a treatment (C) (T) jump & a control group, & experimenters control who goes into which group.
Y (outcome): cortex weight
X (treatment): vs. c
Z (p) (potential confounding factor): genetic background (cortex weight)

positive association

polio
months
soft drink

weight
Y (outcome)  censored
X (treatment)  T enriched
C deprived

Z (potentially)

as Z ↑, Y ↑
as X goes from C to T,
Z ↑↓

PC Fs are the enemy in experimental design because they cause bias in conclusions

How defeat PCs?  hold them constant in T/C comparison