200704

(Note: always define symbols)

1) Let μ_D = mean of the differences in amount of E. coli measured using the two methods (method B − method A) on matched specimens.

$H_0: \mu_D = 0$ (Note: AP scores suggest only writing hypotheses in symbols w/symbols defined, but not also in words, on the AP exam).

$H_A: \mu_D \neq 0$

Matched-pair t-test ← (NOTE: always state clearly what inference procedure you are performing like this)

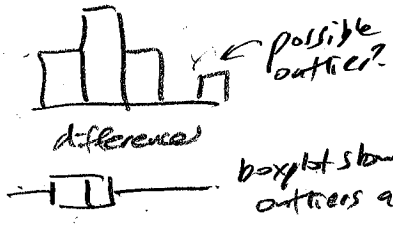
2) Conditions

✓ • SRS? The problem stated the specimens are "randomly selected"

✓ • $n < 10\%$ pop? $10 < 10\%$ of all specimens

✓ • matched-pair data? matched by specimen

✓ • differences nearly normal?



3) perform a TTest in a TI-84 on the differences (method B − method A) with $\mu_0 = 0$ and $\mu \neq \mu_0$

result: $t = -1.456$
$p\text{-value} = .1793$
$df = 10 - 1 = 9$

4) with $\alpha = .05$, $p\text{-value} = .1793$ is high so we fail to reject H_0.
We do not have sufficient statistical evidence to conclude that there is a significant difference in the mean amount of E. coli bacteria detected by the two methods for this type of beef.

↑ organize — work from top to bottom, step-by-step