DALITE Q7 - Two Sample Inference. Solutions.

EPIB607 - Inferential Statistics[a]

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This DALITE quiz will cover two sample inference. This builds on the one sample inference we have seen so far.

Two sample means | Two sample proportions

1. A researcher who wished to test the difference of two (independent) y-bars with reported SEMs, SE0 and SE1 , did so by computing which test statistic?

a. (ybar1 - ybar0) / (SE1 + SE0)
b. (ybar1 - ybar0) / (SE1 - SE0)
c. **(ybar1 - ybar0) / sqrt((SE1)2 + (SE0)2) (Correct)**
d. (ybar1 - ybar0) / sqrt((SE1)2 - (SE0)2)

1.1. Correct rationales.

1.2. Incorrect rationales.

2. Which distribution is closer to Normal ?

a. Body weights of (unrelated) male air passengers
b. Body weights of (unrelated) female air passengers
c. **Sum of weights of a (random male, random female) pair (Correct)**
d. **Difference of weights of a (random male, random female) pair (Correct)**

2.1. Correct rationales.

2.2. Incorrect rationales.

3. Refer to the Table on "Postoperative Effect on Plasma Ascorbic Acid for 105 Cases; Readings on the Same Individuals". You would get contradictory answers if you tested the differences in the means using i. the SE's in columns 1 and 2, and ii. the SE in column 3. TRUE or FALSE? Explain why in your rationale and say which one is correct.

a. **TRUE (Correct)**
b. FALSE

Postoperative Effect on Plasma Ascorbic Acid for 105 Cases; Readings on the Same Individuals

All Cases No. = 105	(1) PreopValue mg/100 ml	(2) PostopValue mg/100 ml	(3) Difference (postop -preop) mg/100 ml
Mean	0.43	0.36	-0.07
SE	0.036	0.028	0.015
95% CI	0.36 to 0.50	0.30 to 0.41	-0.10 to -0.04
			$t = \|4.93\|$
			$P \leq 0.01$(sig)