

Quiz 7 for Statistics 503
Elementary Statistical Methods - Fall 1999
Material Covered: Chapter 8 of Workbook; Chapter 8 of text
For: 1st December

Name (please print): _____
last first

Does the following data indicate that, as a consequence of using the five different *remotivation* methods (A, B, C, D and E), the average levels of *remotivation* are different at $\alpha = 0.01$?

remotivation methods →		A	B	C	D	E
initial	nil	58	68	60	68	64
motivation	very low	62	70	65	80	69
level	low	67	78	68	81	70
	average	70	81	70	89	74

1. [2] Assume a completely randomized design was used for this data. Complete the following ANOVA table.

Source	Sum Of Squares	Degrees of Freedom	Mean Squares
Treatments	(a)	4	(d)
Residual (error)	(b)	(c)	35.6
Total	1166.8		

(a)	(b)	(c)	(d)

2. [1] Based on the ANOVA table in previous question (1), the data (circle one) **supports** / **does not support** the claim the average levels of *remotivation* are different.
3. [1] If a completely randomized design is used for this data, *initial motivation level* would probably be considered a (circle none, one or more) **treatment** / **confounding variable** / **external variable** / **response** / **type of bias**.
4. [1] The total sum of squares for the randomized complete block design, where *initial motivation levels* are used as the blocks, is (circle one) **bigger than** / **the same as** / **smaller than** the total sum of squares for the completely randomized design. Also, in this case, the residual (error) sum of squares (circle one) **increases** / **remains the same** / **decreases**.
5. [1] In a randomized complete block design (circle one)
- (a) initial motivation levels are assigned to patients at random within each *remotivation* method
 - (b) treatments are assigned to patients at random within each *remotivation* method
 - (c) treatments are assigned to patients at random
 - (d) *remotivation* methods are assigned to patients at random within each initial motivation level

1. [2] Assume

(a)	(b)	(c)	(d)
632.8	534	15	158.2

2. [1] **does not support** ($p = 0.014 > \alpha = 0.010$)

3. [1] **confounding variable, external variable**

4. [1] **the same as, decreases**

5. [1] (d)