

STA442S08 Solutions to Quiz 10

1. $F = 7.53$, p-value = 0.0013, the test is significant at the 0.05 level.
2. (a) Fitted function: $\hat{Y} = 23.40356 + 3.60826X + 6.50740A_1 + 3.62964A_2$
where Y = average score for all noise levels.
- (b)

Age	A_1	A_2
1 (Young)	1	0
2 (Middle)	0	1
3 (Old) (<i>reference category</i>)	0	0

- (c) $X = \bar{X} = 2.4316667$
where X = interest in the topic.
- (d)

Age	Least Squares Means
1 (Young)	$23.40356 + 3.60826(2.4316667) + 6.50740(1) + 3.62964(0) = 38.7$
2 (Middle)	$23.40356 + 3.60826(2.4316667) + 6.50740(0) + 3.62964(1) = 35.8$
3 (Old)	$23.40356 + 3.60826(2.4316667) + 6.50740(0) + 3.62964(0) = 32.2$

3. $\alpha_{Bonferroni} = \frac{\alpha}{3} = \frac{0.05}{3} = 0.0167$

4. Pairwise comparisons:

Comparison	F	p-value	Significant?
1 vs 2	2.95	0.0914	No
1 vs 3	15.04	0.0003	Yes
2 vs 3	4.51	0.0381	No

5. Allowing for interest in the topic and noise level, young subjects tend to have higher score than old subjects, on average.

You get zero for this quiz if

- you didn't hand in both .log and .lst files;
- there were no date and time on the files;
- the date and time on .log and .lst files were not the same;
- you used other's account to produce the files;
- there were errors in your .log file or;
- there were warnings in your .log file.

You are *strongly* recommended to use SAS on tuzo.