

## Example Final Items

1. A two-way ANOVA is conducted and the error sum of squares is worked out as 140.59. If the researcher chooses to ignore one of the factors and perform a one-way ANOVA with the same data, the error sum of squares will be:

- a. smaller than 140.59.
- b. larger than 140.59
- c. equal to 140.59
- d. no way to tell

2. ANOVAs evaluate how likely differences between conditions are due to:

- a. Sphericity
- b. Normal distributions
- c. Sampling error
- d. Homogeneity of variance

3. When using regression to test for interaction effects, At which stage (block) is the interaction entered in hierarchical multiple regression?

- a. At in the same block as the criterion
- b. At in the same stage as the predictors
- c. always in the first block before the main effects
- d. always in the second block after the main effects

4 A business analyst wanted to predict the success of a government intervention in failing firms, predicted by a categorical variable, 'duration of financial difficulty prior to the intervention'. The predictor variable had four categories: less than 6 months, 6–12 months, 1–2 years, more than 2 years. They needed to code these variables into dummy variables for the regression using less than 6 months as their control category. Which of the following represents the correct coding scheme?

	Duration of financial problems	Dummy 1 (Under 6 Months vs 6-12 Months)	Dummy 2 (Under 6 Months vs 1-2 Years)	Dummy 3 (Under 6 Months vs Over 2 Years)
	Under 6 Months	0	0	0
	6-12 Months	1	0	0
	1-2 Years	0	1	0
	More Than 2 Years	0	0	1

a.

b.

	Duration of financial problems	Dummy 1 (Under 6 Months vs 6-12 Months)	Dummy 2 (Under 6 Months vs 1-2 Years)	Dummy 3 (Under 6 Months vs Over 2 Years)
	Under 6 Months	1	1	1
	6-12 Months	1	0	0
	1-2 Years	0	1	0
	More Than 2 Years	0	0	1

c.

	Duration of financial problems	Dummy 1 (Under 6 Months vs 6-12 Months)	Dummy 2 (Under 6 Months vs 1-2 Years)	Dummy 3 (Under 6 Months vs Over 2 Years)
	Under 6 Months	0	0	0
	6-12 Months	0	1	1
	1-2 Years	1	0	1
	More Than 2 Years	1	1	0

d.

	Duration of financial problems	Dummy 1 (Under 6 Months vs 6-12 Months)	Dummy 2 (Under 6 Months vs 1-2 Years)	Dummy 3 (Under 6 Months vs Over 2 Years)
	Under 6 Months	1	1	1
	6-12 Months	0	1	1
	1-2 Years	1	0	1
	More Than 2 Years	1	1	0

5. A training consultant wanted to see the effects of different learning strategies for teaching management accounting skills to employees. A control group read the book *Accounting for Managers* (book), a second group read the book and completed the 'end of chapter exercises' (book and exercises), and a third group read the book, did the end of chapter examples and also completed the web materials (all activities). The trainer predicted that the 'all activities' and 'book and exercises' groups would perform better than the 'book' group on a subsequent test, but that the 'book and exercises' group would be worse than the 'all activities' group. Which coding scheme would test these hypotheses in a set of planned comparisons?

**Case Summaries<sup>a</sup>**

	Contrast	Book	Book & Exercises	All Activities
1	Contrast 1	0	1	1
2	Contrast 2	0	1	-1

a. Limited to first 100 cases.

a.

**Case Summaries<sup>a</sup>**

	Contrast	Book	Book & Exercises	All Activities
1	Contrast 1	-2	1	1
2	Contrast 2	0	1	-1

a. Limited to first 100 cases.

b.

**Case Summaries<sup>a</sup>**

	Contrast	Book	Book & Exercises	All Activities
1	Contrast 1	2	1	1
2	Contrast 2	0	1	1

a. Limited to first 100 cases.

c.

**Case Summaries<sup>a</sup>**

	Contrast	Book	Book & Exercises	All Activities
1	Contrast 1	2	-1	-1
2	Contrast 2	0	-1	-1

a. Limited to first 100 cases.

d.

6. Levene's test tests whether:

- a. Data are normally distributed.
- b. The variances in different groups are equal.
- c. The assumption of sphericity has been met.
- d. Group means differ.

7. The critical value of F (beyond which you would start rejecting  $H_0$ ) for an  $F(3,18)$   $\alpha = .05$  is:

- a. 1.0000
- b. 8.6602
- c. 3.5915
- d. 3.1599

8. Which of the following statements about the assumption of sphericity is not true?

- a. It can be tested using Mauchly's test.
- b. It does not apply when a variable has only two levels.
- c. It does not apply when multivariate tests are used.
- d. It is the assumption that the variances for levels of a repeated-measures variable are equal.

9. If there is evidence of sphericity in a repeated-measures design the outcome could be that:

- a. The p-value will be too high.
- b. The p-value will be too low.
- c. A p-value cannot be computed.
- d. The p-value will not be related to the model.

10. Which of the following source of variability in repeated-measures ANOVA is not relevant to whether or not there is a treatment effect

- a. Between people
- b. Within people
- c. Between groups
- d. all are relevant

Answers:

- 1 B
- 2 C
- 3 D
- 4 A
- 5. B
- 6 B
- 7 D
- 8. D
- 9. B
- 10. A