

ANOVA Practice Worksheet

1. A researcher is interested in the self-esteem levels of teachers of three different subjects. The levels of self-esteem for the four English teachers were 2, 2, 3, and 5. For the three Maths teachers the self-esteem levels were 6, 4, and 5. For the five Social studies teachers the self-esteem levels were 9, 6, 7, 10, and 1.
 - a. What type of ANOVA should be conducted? _____
 - b. Using SPSS conduct the appropriate ANOVA and write-up your findings as you would for a report in the space below:

2. There is evidence to suggest smoking cannabis leads to short-term memory loss. Seven smokers who normally did not smoke cannabis were recruited to answer difficult arithmetic questions under four different conditions. In the placebo condition they smoked a herbal mixture, which they were told was cannabis. In condition 2 they smoked a small amount of cannabis. In condition 3 they smoke a moderate amount of cannabis. Finally, in condition 4 they smoked a large amount of cannabis. To avoid practice effects there were four different arithmetic tests. To avoid order effects and fatigue the order in which participants took the tests was counterbalanced. The results were are follows:

Pt no.	Placebo	Low amount	Medium amount	High amount
1	19	16	8	7
2	14	8	8	11
3	18	17	6	3
4	15	16	17	5
5	11	14	16	7
6	12	10	9	8
7	11	9	5	11

- a. What type of ANOVA should be conducted? _____
- b. Using SPSS conduct the appropriate ANOVA and write-up your findings as you would for a report in the space below:

3. A Psychologist conducted a study to compare the relative effectiveness of three different types of therapy for different client diagnoses. Patients with two types of diagnoses were randomly allocated to one of the three types of therapy. The study employed a 2x3 between-participants design. The effectiveness results are displayed in the table below:

	Therapy A	Therapy B	Therapy C
Diagnosis 1	6	3	2
	2	1	4
Diagnosis 2	11	7	8
	9	9	10

- What type of ANOVA should be conducted? _____
- Using SPSS perform the statistical test you have suggested.
- Use the Plot dialog box to select a line graph of your data to help you interpret any interaction effects.
- Conduct Bonferroni and Tukey post hoc tests.
- Write-up the results as you would for a report in the space below:

4. A researcher conducts an experiment to investigate the effects of alcohol and caffeine on driving ability. Alcohol is the between participant IV and Caffeine is the within participant IV. The allocation of participants to conditions and their scores on the driving test are presented in the table below:

No Alcohol			Alcohol		
Participant	No Caffeine	Caffeine	Participant	No Caffeine	Caffeine
1	4	8	13	28	5
2	9	4	14	22	6
3	10	9	15	21	14
4	8	0	16	27	8
5	6	8	17	21	14
6	11	6	18	20	5
7	2	6	19	19	11
8	11	3	20	16	8
9	11	0	21	25	10
10	10	8	22	17	11
11	3	9	23	19	8
12	10	8	24	20	8

- What type of ANOVA should be conducted? _____
- Using SPSS perform the statistical test you have suggested.
- If necessary, perform any follow-up tests.
- Write-up the results as you would for a report in the space below: