

Study Psychology

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A-Level Psychology Practice Paper

This is a practice paper intended for revision
following the **EDEXCEL** specification.

Paper 3: Psychological Skills

2 hours



FORMULAE AND STATISTICAL TABLES

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum (x - \bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	0.025	0.01	0.005	0.0025
	Level of significance for a two-tailed test				
N	0.10	0.05	0.025	0.01	0.005
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

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The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)**Critical values for the Mann-Whitney U test**

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.05$ (one-tailed), $p \leq 0.10$ (two-tailed)																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138
N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.025$ (one-tailed), $p \leq 0.05$ (two-tailed)																
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
17	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
18	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
20	20	27	34	41	48	55	62	69	76	83	90	98	105	112	119	127

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.01$ (one-tailed), $p \leq 0.02$ (two-tailed)																
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
18	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
19	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.005$ (one-tailed), $p \leq 0.01$ (two-tailed)																
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference

- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

<i>n</i>	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
	0.1	0.05	0.02
N=5	0	–	–
6	2	0	–
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

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Section A: Research Methods

1.

A psychologist was interested in studying aggressive behaviour in chimpanzees in the zoo. Previous research has indicated that social hierarchies are created among chimpanzees led by the alpha males in the group. These hierarchies are seen by displays of aggression and dominance in the group.

Behavioural categories to investigate social dominance in males were created. Two alpha male chimpanzees were selected as the subjects and were observed over 3 days in both morning and afternoons sessions. Their behaviour was compared against two older females in the group.

Two of the main findings are outlined below:

Table 1: Shows the total number of behavioural displays seen in the observation across the 3 days for Aggression and Dominance

	Male Chimpanzees	Female Chimpanzees
Aggressive behaviour over other males in the group	16	3
Dominance over females in the group	12	0

- a. Describe **one** way in which the behavioural category of 'aggressive' behaviour could be operationalised in this study. (2)

b. Explain what the data in **table 1** tells us about the differences between males and females and their 'aggressive behaviour over other males in the group'. **(2)**

c. Give **one** strength of conducting a naturalistic observation in this study. **(2)**

d. The psychologist used event sampling in this observation, define what this means. (2)

e. Suggest **one** way in which the psychologist could improve the reliability of this observation. (2)

f. The psychologist decided to analyse the data using a Chi-Squared test. Explain why this is a suitable choice of test for this investigation. (3)

- g.** Use the formula below to calculate the degrees of freedom for this test. **(1)**

$$df = (r-1)(c-1)$$

Answer

Critical values for chi-squared distribution

df	0.10	0.05	0.025	0.01	0.005	0.0005
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

- h.** The calculated value from the Chi-Squared test was **2.093**. Use the critical value table to determine the significance of this result and write a significance statement to explain this result. **(2)**

[illegible]

- i. Outline **one** conclusion that could be made about social dominance in chimpanzees based on the results of this investigation. **(1)**

2.

Researchers were interested in how colour affects mood. They asked a group of students to rate how they felt after looking at a series of pictures.

Each picture depicted a scene in nature based on colour;

*** Blue: Boat on the ocean**

*** Green: Frog sat on a tree in the Amazon forest**

*** Yellow: Field of sunflowers**

*** Red: Sunset on a beach**

*** Grey: Mist and rain over a woodland**

Each student was shown the pictures in the same order.

A rating scale for mood was used on a scale of 1 to 5, where 1= sad/ upset, 3 = neutral, 5 = happy/ content.

- a. Outline how the researchers could use volunteer sampling to gather a sample of 20 student participants in this study. **(2)**

The descriptive statistics calculated from the results of the study are shown in **table 2**. The mood rating scores were collated for the total sample of 20 participants based on their scores from the questionnaire (where mood was recorded as **1 = sad** and **5 = happy**).

Table 2: shows the mean and standard deviation scores of mood ratings based on each colour themed picture.

	Mean	SD
Blue	62	4.4
Green	18	1.2
Yellow	12	1.1
Red	36	2.2
Grey	8	1.5

b. Using the mean data in **table 2**, outline **one** conclusion which can be made about feelings of mood after seeing the coloured pictures? **(2)**

c. Give **one** reason to explain the differences in the standard deviation scores seen in **table 2**. **(2)**

d. Suggest **one** way the researchers could improve this study. **(1)**

Total Marks for Section A: 24 marks

Section B: Review of Studies

3.

A study aimed to investigate how 12 year old boys are influenced by their peers.

Researchers asked a class of young boys starting high school (Y7) how much they felt they listened to the advice of their friends, and how likely they would be to copy the behaviour of others in their friendship group.

The results of the analysis are shown in table 3.

Table 3: Shows the total number of boys who responded with YES or NO answers to the two questions.

		Y7 boys (N = 14)
Q1.	Yes: listen to advice	12
	No: does not listen to advice	2
Q2.	Yes: copies the behaviour of peers	9
	No: does not copy the behaviour of peers	5

- a. The researchers wanted to compare the responses to the question regarding listening to advice from friends. Using the data in **table 3**, calculate the percentage (%) for boys who said '**YES: listen to advice**'. (2)

(i) **Answer** for YES: listen to advice

b. Explain how social identity theory supports the findings of this study. (6)

This image shows a full page of primary-ruled paper. It features multiple sets of horizontal lines designed to guide young learners' handwriting. Each set consists of three lines: two dashed outer lines and a solid middle line. These sets are repeated down the entire page, providing ample space for practicing letter formation and alignment. The paper is otherwise blank, with no text or other markings.

4. Evaluate the classic studies by Sherif (1954/61) and Watson and Rayner (1920) in terms of reductionism. (16)

[illegible]

Handwriting practice lines consisting of multiple sets of three horizontal dashed lines, with a solid line on the left side of each set.

Handwriting practice lines consisting of multiple sets of three horizontal dashed lines for tracing and writing practice.

Handwriting practice lines consisting of multiple sets of three horizontal lines (top solid, middle dashed, bottom solid) for letter formation.

Section C: Issues and Debates

- Henry has just celebrated his 50th birthday with his family. He has noticed that at times he struggles to control his anger, and often snaps at his two young sons, without meaning to. Henry's father also has issues with anger and was not a loving or affectionate father to Henry growing up. Henry recently started experiencing intense headaches and as a result has given up a successful career in property management. This is also making him resent his wife, who tries tirelessly to keep him happy and positive.

Evaluate the extent to which theories in biological psychology could be used to explain Henry's feelings of anger and resentment. You must make reference to the context in your answer. **(12)**

[illegible]

Handwriting practice lines consisting of multiple sets of three horizontal lines (top solid, middle dashed, bottom solid) for letter formation.

Handwriting practice lines consisting of multiple sets of three horizontal dashed lines for tracing and writing practice.

6. Assess how comparisons of ways of explaining behaviour using different themes might help our understanding of cognitive psychology. (20)

[illegible]

Handwriting practice lines consisting of multiple sets of three horizontal lines (top solid, middle dashed, bottom solid) for letter formation.

Handwriting practice lines consisting of multiple sets of three horizontal dashed lines for tracing and writing practice.

Handwriting practice area with 30 sets of dashed lines for tracing on a solid background line.

Total Marks for Section C: 32 Marks

END OF PAPER

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