

Prep 6: Data Distributions and an introduction to statistical testing

Normal and Skewed Distributions

Task 1: Normal Distribution

Watch the clip <https://www.youtube.com/watch?v=8MLFHd7kW0k>

Answer the questions below

1. Explain the appearance of a normal distribution curve
2. Explain three characteristics/features of a normal distribution
3. _____ of the population fall between one standard deviation above and one standard deviation below the mean value (the middle section of the curve).
4. _____ of the population fall between two standard deviations above and below the mean value
5. _____ of the population fall between three standard deviations above and below the mean value

Task 2: Skewed Distribution

Watch the clip : <https://www.youtube.com/watch?v=xpbYKaEbcPA>

Answer the following

1. Sketch a graph demonstrating a negative distribution (left skew)
2. Sketch a graph demonstrating a positive distribution (right skew)
3. Explain why a mean is always lower than the mode and median in a negative skew.
- 4.

A psychologist is investigating the investment model of relationships, devised a self-report Investment Scale for use with a group of 100 female participants. The scale gave an investment score for each participant on a scale of 0–20, with 0 representing no investment in relationships and 20 representing extreme investment in relationships. The psychologist calculated measures of central tendency for the investment scores. He found that the mean investment score was 8.6, the median investment score was 9.5 and the mode investment score was 13.

Sketch a graph to show the most likely distribution curve for the investment scores in this study. Label the axes of your graph and mark on it the positions of the mean, median and mode. [3 marks]

What sort of distribution does your graph show? [1 mark]

Introduction to statistical testing

Task 1: Levels of measurement

Use the link: http://psc.dss.ucdavis.edu/faculty_sites//sommerb/sommerdemo/scaling/levels.htm

Define the following types of data and provide an example

Nominal:

Ordinal:

Interval:

The Sign test

The Sign test is the only statistical test you need to calculate in the exam.

Task 2: We use a sign test when....(fill in the gaps using your RM pack page 48)

1. We are looking for a _____, rather than an association
2. We have used a _____ measures design
3. Data is organised into _____ (known as _____ data)

Task 3: Watch **the sign test clips** on Psych205 and read the research methods pack and complete the following

Important things to remember for a sign test (fill in the gaps using your RM pack) :

- The Calculated or observed value is found by the _____ and is compared to the critical value in the _____
- You need to know the following three pieces of information to check the significance?
 - 1.
 - 2.
 - 3.
- The calculated value of s must be equal to or _____ than () the _____ value at the 0.05 level of significance

Task 4: Have a go at the following exam questions using your notes and the critical value table in your pack

A psychologist did a piece of research looking at if they lost weight after following a new diet programme where participants had to draw pictures of the food they were going to eat before eating it. The findings are detailed on the right

1. What is the observed value for the above research? [1 marks].
2. The critical value was 0 for the research, were the findings significant? Justify your answer (2 marks)

Participant	Difference after new diet
1	=
2	+
3	+
4	+
5	-
6	-
7	+
8	+