The idea behind permutation testing is that the null hypothesis can be reworded to state that "any pattern that has been witnessed in the sampled data is simply due to random chance ."

Permutation tests can be applied to any hypothesis testing scenario in order to compute the

p-value

of the test

in a way that does not require any assumptions on the data. The most difficult part of any permutation test is figuring out how to permute the data, which is performed differently for each hypothesis test. Thus, being able to identify the hypothesis test from the stated hypotheses is an important skill you have hopefully started to develop. To see how you are doing with this skill, match the following null hypotheses with their appropriate test.



- 1. H_0 : difference in medians = 0
- 2. $H_0: \mu_1 = \mu_2$
- 3. $H_0: \mu_d = 0$
- 4. H_0 : the two variables are not associated
- 5. $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$
- 6. H_0 : median of the differences = 0