

Chi-Square and other calculations of allele and genotype proportions

1. **ChiSq MN**: complete Chi-square calculations for populations given. Report χ^2 value and probability. Repeat, with double the sample size. For any populations that appear to be in expected proportions, increase sample sizes to 5x.
2. **ChiSq ABO**: Complete chi-square calculations an **ABO** system data, treating four phenotypes as independent classes.
Question: why is such a calculation misleading? Repeat calculations with increased sample sizes, as above.
3. **G-Test**: Consult first worksheet for layout of a row-by-column (rxc) G-test. In the second worksheet, appreciate the re-arrangement of a general G-test for **A B AB O** genetic data.
4. Apply the **G-test** to the population **A B AB O** population data on the 4th & 5th sheets. Repeat calculations with increased sample sizes, as above.
5. For the A B AB O population data rendered as A B O allele frequencies, try a series of Chi-square or G-tests to look for differences between ethnic populations. State a null hypothesis: for example, *“There is no difference between African and Asian proportions.”*