* **Tests for multiple proportions**
  + Consider p1 = x1/n1 … pk = xk/nk
  + Test for H0: proportions are all equal vs. Ha: proportions are not all equal
  + Create table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Sample 1** | **…** | **Sample k** | **Total** |
| **Successes** | x1 | … | xk | x |
| **Failures** | n1 – x1 | … | n1 – xk | n – x |
| **Total** | n1 | … | nk | n |

* + Entry in ith row and jth column = oij = observed cell frequency
    - Where i = 1, 2; j = 1 … k
  + Expected # of successes & failures for each sample = expected cell frequencies
    - eij = (ith row total) ⋅ (jth column total)/(grand total)
  + Test statistic , d. f. = (a – 1)(b – 1) = k – 1
* **Test for goodness of fit**
  + Consider an observed frequency distribution
  + Test for H0: r. v. follows a given distribution with given parameter(s) vs. Ha: it doesn’t
  + Test statistic , d. f. = k – m
    - k = # of frequencies/classes in observed distribution
    - m = # of parameters taken from observed distribution to calculate expected frequencies