One-Way Chi-Square Test

In [18]:
```
from scipy.stats import chisquare
from scipy.stats import chi2
observed = [36, 44, 38, 37, 45]
expected = [40, 40, 40, 40, 40]
stat, pval = chisquare(observed, expected )

dof = 4

# interpret test-statistic
prob = 0.95
critical = chi2.ppf(prob, dof)
print('probability=%.3f, critical=%.3f, stat=%.3f' % (prob, critical, stat))
if abs(stat) >= critical:
    print('Dependent (reject H0)')
else:
    print('Independent (fail to reject H0)')
```

```
probability=0.950, critical=9.488, stat=1.750
Independent (fail to reject H0)
```

Chi-Square Contingency Test

In [17]:
```
from scipy.stats import chi2_contingency
from scipy.stats import chi2
data = np.array([[122, 167, 528, 673], [203, 118, 178, 212]])

stat, p, dof, expected = chi2_contingency(data)

# interpret test-statistic
prob = 0.95
critical = chi2.ppf(prob, dof)
print('probability=%.3f, critical=%.3f, stat=%.3f' % (prob, critical, stat))
if abs(stat) >= critical:
    print('Dependent (reject H0)')
else:
    print('Independent (fail to reject H0)')
```

```
probability=0.950, critical=7.815, stat=190.401
Dependent (reject H0)
```

In [ ]:
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In [ ]:
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In [ ]:
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