proportion test | *mean test*

$$\sigma^2 = p_0(1 - p_0)$$

$$s^2 = \frac{\sum (x_i - \overline{x})^2}{n-1}$$

$$z\text{-stat} = \frac{\overline{p} - p_0}{\sqrt{\sigma^2 / n}}$$

$$t\text{-stat} = \frac{\overline{x} - \mu_0}{\sqrt{s^2 / n}}$$

TWO-MEAN TESTS

$$t\text{-stat} = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

TWO-PROPORTION TESTS

$$z\text{-stat} = \frac{\overline{p}_1 - \overline{p}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

$$\sigma_1^2 = \overline{p}_1(1 - \overline{p}_1) \qquad \sigma_2^2 = \overline{p}_2(1 - \overline{p}_2)$$

or

$$\sigma_1^2 = \overline{p}\,(1 - \overline{p}\,) \qquad \sigma_2^2 = \overline{p}\,(1 - \overline{p}\,)$$

when testing the equality of proportions

ONE-VARIANCE TESTS

$$\chi^2\text{-stat} = (n-1) \cdot \frac{s^2}{\sigma^2}$$

CV
column $\alpha/1$ or $\alpha/2$
row df

TWO-VARIANCE TESTS

$$F\text{-stat} = \frac{s_1^2}{s_2^2}$$

CV
column numerator df
row denominator df & $\alpha/1$ or $\alpha/2$