Formula Sheet for Exam 4. These formulas will be attached to exam 4 and, as usual, the exam is not to be taken apart. Do not bring this sheet to the exam expecting to use it since no extra papers of any kind are allowed when taking the exam.

$$\sqrt{\hat{p}_{pooled}\left(\frac{1}{n_1}+\frac{1}{n_2}\right)}$$

$$\sqrt{\frac{s_x^2}{n_x}+\frac{s_y^2}{n_y}}$$

$$\sqrt{\frac{\hat{p}_x\,\hat{q}_x}{n_x}+\frac{\hat{p}_y\,\hat{q}_y}{n_y}}$$

$$n \sim \left(\frac{(|z_0|+|z_1|)\,s_0}{\mu_0-\mu_1}\right)^2$$

$$n \sim \left(\frac{|z_0|\sqrt{p_0\,q_0}+|z_1|\sqrt{p_1\,q_1}}{p_0-p_1}\right)^2$$

$$\frac{\bar{x}-\mu_0}{\frac{s}{\sqrt{n}}} \approx z \text{ or } = t$$

if true $\mu = \mu_0$

$$\frac{\hat{p}-p_0}{\frac{\sqrt{p_0\,(1-p_0)}}{\sqrt{n}}} \approx z$$

if true $p = p_0$

$$\sqrt{\frac{N-n}{N-1}}$$

sampling without repl.

$$\frac{\hat{p}_x-\hat{p}_y-(p_x-p_y)_0}{\sqrt{\frac{\hat{p}_x\,\hat{q}_x}{n_x}+\frac{\hat{p}_y\,\hat{q}_y}{n_y}}}$$

$$\frac{(\bar{x}-\bar{y})-(\mu_x-\mu_y)_0}{\sqrt{\frac{s_x^2}{n_x}+\frac{s_y^2}{n_y}}}$$