100A Waiver Examination:

You may find these formulas useful

$$z = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}} \qquad t = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$$

$$t = \frac{(\bar{x}_1 - \bar{x}_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \qquad t = \frac{(\bar{x}_1 - \bar{x}_2)}{S_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

$$\chi^2 = \sum \frac{(observed - expected)^2}{expected} \qquad \chi^2 = \frac{(b - c)^2}{(b + c)}$$

$$\bar{x} - z^* \frac{\sigma}{\sqrt{n}} < \mu < \bar{x} + z^* \frac{\sigma}{\sqrt{n}}$$

$$\bar{x} - t^* \frac{s}{\sqrt{n}} < \mu < \bar{x} + t^* \frac{s}{\sqrt{n}}$$

$$\bar{d} - t^* \frac{s_d}{\sqrt{n}} < \mu_1 - \mu_2 < \bar{d} + t^* \frac{s_d}{\sqrt{n}}$$

$$(\bar{x}_1 - \bar{x}_2) - t^* \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}} < \mu_1 - \mu_2 < (\bar{x}_1 - \bar{x}_2) + t^* \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$

$$(\bar{x}_1 - \bar{x}_2) - t^* s_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}} < \mu_1 - \mu_2 < (\bar{x}_1 - \bar{x}_2) + t^* s_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$$

$$n = \left(\frac{z^*\sigma}{m}\right)^2$$ where m is the margin of error