STAT 3093, Ass #4
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Q2 (Ex 8, pg 391)

a) The general expression for the CI is

$$\left(\bar{X} - |z_{\alpha_1}| \frac{\sigma}{\sqrt{n}} , \bar{X} + |z_{\alpha_2}| \frac{\sigma}{\sqrt{n}} \right)$$

b) $\alpha_1 = \frac{\alpha}{4} = \frac{0.05}{4} = 0.0125$, $z_{\alpha_1} = -2.24$

$\alpha_2 = \frac{3\alpha}{4} = \frac{3(0.05)}{4} = 0.375$, $z_{\alpha_2} = -1.78$

The resulting confidence interval would be wider because

$$|z_{\alpha_1}| + |z_{\alpha_2}| > |z_{\alpha/2}| + |z_{\alpha/2}|$$

$$2.24 + 1.78 > 1.96 + 1.96$$

$$4.02 > 3.92$$