

# QUICK HELP

MAT 109 Statistics

## **Confidence Interval for a Proportion**

Purpose: To use a sample proportion to estimate the range in which the population proportion will fall.

Required Information:

$\alpha$  = level of confidence

$p$  = sample proportion

$n$  = sample size

$z$  = z score based on the desired level of confidence

The desired z score will be such that the area between  $-z$  and  $+z$  will be  $\alpha$

$q = 1 - p$

Calculation of Bounds:

$$p \pm z\sigma_p \quad \sigma_p = \sqrt{\frac{pq}{n}}$$

\* Add to obtain the upper bound on the confidence interval and subtract to obtain the lower bound on the confidence