Confidence intervals for the proportion

- If the sample size n is large, then a $(1-\alpha)100\%$ confidence interval for population proportion p is

$$\left[\hat{p} \pm z_{\alpha/2}\sqrt{\frac{1}{n}\hat{p}(1-\hat{p})}\right]$$

- Here, n should be considered large if both

$$\begin{aligned} n\hat{p} &\geq 5 \\ n(1-\hat{p}) &\geq 5 \end{aligned}$$

  are satisfied.