Repeat the data from the last example but we want a max. error of 3% confidence.

\[ \alpha = 1 - .95 = .05 \]

\[ 1 - \frac{\alpha}{2} = 1 - \frac{.05}{2} = .9750 \]

\[ \begin{array}{c}
\text{Table A1} \\
\text{.96} \\
1.9 < .9750 \\
\text{Z}_{\alpha/2} = 1.96 \\
\end{array} \]

\[ p = .44, \hat{p} = .56 \]

\[ N = \frac{Z_{\alpha/2}^2 \hat{p} \hat{q}}{E^2} = \frac{1.96^2 (.44)(.56)}{.03^2} \]

\[ = 1051.7 \]

Suppose no \( p \) value is available.

Round \( N \) to the nearest new sample size.

![Some possible values]

\[ \begin{array}{c|c|c}
\hat{p} & \hat{q} & \hat{p} \hat{q} \\
\hline
0 & 1.00 & 0 \\
.10 & .90 & .09 \\
.20 & .80 & .16 \\
.30 & .70 & .21 \\
.40 & .60 & .24 \\
.50 & .50 & .25 \\
.60 & .40 & .24 \\
.70 & .30 & .21 \\
.80 & .20 & .16 \\
.90 & .10 & .09 \\
1.00 & 0 & 0 \\
\end{array} \]

This means we can use

\[ N = \frac{Z_{\alpha/2}^2 (0.25)}{E^2} \]

Using this, our last example becomes

\[ N = \frac{Z_{\alpha/2}^2 (.25)}{E^2} = \frac{1.96^2 (.25)}{.03^2} \]

This still gives the 3% error but doesn't require preliminary data.

\[ \rightarrow 1067.1 \]

\[ \rightarrow 1068 \]