a. Estimate the population proportion is \( \frac{300}{400} = 0.75 \)

\[
\hat{p} = \bar{p} \pm z \sqrt{\frac{p(1-p)}{n}}
\]

\[
\hat{p} = 0.75 \pm 2.58 \sqrt{\frac{0.75 (0.25)}{400}}
\]

\[
\hat{p} = 0.75 \pm 2.58 (0.022)
\]

\[
\hat{p} = 0.75 \pm 0.06
\]

\[
0.69 < \hat{p} < 0.81
\]

\[
69\% < \hat{p} < 81\%
\]

b. We reasonable sure that the population proportion between 69 % and 81 %