Pride

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$\sigma = 100,000 \qquad \bar{x} = 500 \qquad n = 30$

CI = Point Estimate $\pm$ margin

α = significance = 0.05

$= \bar{x} \pm Z_{\frac{\alpha}{2}} \frac{\sigma}{\sqrt{n}}$

$= 500 + \frac{0.05}{2} \frac{10,000}{\sqrt{30}}$

$= 500 + 0.025 \times \frac{100,000}{5.47}$

$= 500 + 18258.45$

$Z_{0.025} = 1 - 0.025$
$= 0.976$

Z table $= 1.96$

Lower limit $= 500 - 1.96 \times \frac{100,000}{\sqrt{30}}$

$= -17758.17$

Higher limit $= 500 - 1.96 \times \frac{100,000}{\sqrt{30}}$

$= 18758.17$

m = 97% 95%

-17758.17 to 18758.77