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$$\hat{p} - \underbrace{\left|z_{\alpha/2}\right|\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}}_{\text{margin of error}} < p < \hat{p} + \left|z_{\alpha/2}\right|\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

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Answer:

The 90% confidence interval is…

[0.453, 0.567] or [45.3%, 56.7%]

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