

Assignment 12

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Papoulis chap 8 Exercise 8.10

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Problem

8-10 Among 4000 newborns, 2080 are male. Find the 0.99 confidence interval of the probability $p = P \{male\}$

Solution

With $\bar{x} = \frac{2080}{4000} = 0.52$, $n=4000$ and $z_u \approx 2.326$.

$$P_{1,2} \approx \bar{x} \pm z_u \sqrt{\frac{\bar{x}(1 - \bar{x})}{n}} = .52 \pm 0.18 \quad (1)$$

Hence, $.502 < p < .538$

The 0.99 confidence interval of probability $p = P \{male\}$ lies between 0.502 and 0.538

CODES

Python

[Download python code from - Python](#)

Beamer

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