

# Homework 2016-03-21

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## Problem 1.

Calculate the confidence interval with a confidence level of 0.95 of the samples given.

*Proof.* Firstly, the mean of the samples  $\bar{x} = \frac{1}{10} \sum_i x_i = 10.05$ . □

## Problem 2.

If the rate of abnormality in this area is below the average with the information provided.

*Proof.*  $P(\text{Only one person is of abnormality} | \text{The rate of abnormality is } 0.01) = \binom{400}{1} * (1-0.01)^{399} * 0.01 = 0.0725 > 0.05$ , which implies that this phenomenon is just possible, hence the rate of abnormality in this area can NOT be seen as below the average. □