

34. Let X_1, \dots, X_n be IID normal(θ, σ^2), where σ^2 is known. A 95% confidence interval for the mean is $\bar{x} \pm 1.96\sigma/\sqrt{n}$. Let p denote the probability that an additional observation X_{n+1} will fall in this interval. Is p greater than, less than, or equal to 0.95? Prove your answer.