Week 8 quiz: Lots of faculty

Started: Oct 13 at 11:41pm

Quiz Instructions

Faculty salaries at a large university have a mean of $100,000 and a standard deviation of $40,000.

Suppose I wish to take a random sample of 400 faculty members from the university, with replacement.

Let $\bar{X}$ be a random variable representing the sample mean of the salaries of the 400 faculty members I will sample.

Question 1 — 1 pts

What is

$E(\bar{X})$

i.e., the expected value of the sample mean of the 400 faculty members' salaries?

100,000

Question 2 — 1 pts

What is

$SD(\bar{X})$

i.e. the standard deviation of the sample mean of the 400 faculty members' salaries?

2,000

Question 3 — 1 pts

According to the Central Limit Theorem, what is

$$P(\bar{X} > 97000)$$

i.e. what's the probability the sample mean of the 400 faculty salaries is over $97,000?

You'll need to use R to answer this. Give your answer as a decimal.

0.9332

Quiz saved at 11:42pm

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