HW 11.18

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Problem 1

A medical school advertises that the mean starting salary of its graduates is $89,000. Concerned that it may actually be less, a group of first-years surveys 38 recent graduates, finding a sample mean of $85,500. Assume σ= $8000.

a.)

- H_o : The mean starting salary of the graduates is $89,000
- H_a : The mean starting salary of the graduates is less than $89,000

b.)

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(85500 - 89000) / (8000/sqrt(38))
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[1] -2.696931
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c.)

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pnorm(85500, 89000,8000/sqrt(38))
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[1] 0.003499087
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d.)

since the p-value = 0.0035 is less than α the result is statistically significant.

e.)

Based on the survey data, there is strong statistical evidence to suggest that the true mean starting salary for graduates of the medical school is less than the advertised \$89,000. The probability of observing a sample mean of \$85,500 or lower purely by random chance (if the true mean were \$89,000) is very low (only about 0.35%). Therefore, the first-year students' concern appears to be justified.