

Questions on lesson 2.4?

We will be having our concept mastery quiz shortly on a 95% C.I. and statistical significance.

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A sample of 40 students at High Marks High School responded to a survey about the average amount of time spent on homework each day. The sample mean was 2.9 hours and the sample standard deviation was 0.8 hour.

$$\text{Sample Mean} \pm 2 \left(\frac{s}{\sqrt{n}} \right)$$



1. Use a 95% confidence interval to determine a range of values for the population mean. Explain your work.

$$2.9 \pm 2 \left(\frac{0.8}{\sqrt{40}} \right)$$

2.64 to 3.16 hours is the 95% C.I.

2. Label the horizontal axis of the normal curve that represents the sampling distrib

This problem is similar to the last problem, only using continuous data instead of discrete data.

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$$\hat{p} \pm 2 \left(\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \right)$$

3. The Reporter newspaper published a survey of 90 residents and 38 stated that they are in favor of the tax increase. Use a 95% confidence interval to determine a range of values for the population proportion. Explain your work.

$$\hat{p} = \frac{38}{90} = 0.42 = 42\%$$

$$\sqrt{\frac{0.42(1-0.42)}{90}} = 0.052 = 5.2\%$$

$$42 \pm 2(5.2)$$

31.6% to 52.4% is the 95% C.I.

If two confidence intervals overlap, then the difference between the population proportions or population means is not statistically significant. If the intervals do not overlap then the difference between the population proportions or population means is statistically significant.

Content Mastery Quiz - lesson 2.4

Show ALL work to receive full points

A sample of 75 taxi riders were asked how much their trip cost. The sample mean was \$23.75 and the sample standard deviation was \$1.20.

$$\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \quad \frac{s}{\sqrt{n}}$$

- 1) Determine the range of values for a 95% C. I. for the data.
- 2) If a ride cost \$24.00, is this statistically significant or not?

Statistics Review