

Name: _____ Hour: _____ Date: _____

AP[®] Statistics

Do You Want to Take the AP Exam?

AP[®] Calculus

A random sample of 300 AP Statistics students revealed that 92% of them wanted to take the AP Exam. Construct and interpret a 95% confidence interval for the true proportion of all AP Statistics students who want to take the AP Exam.

STATE:

Parameter:

Confidence level:

PLAN:

Name of procedure:

Check conditions:

DO:

General Formula:

Specific Formula:

Work:

Answer:

CONCLUDE:

Name: _____ Hour: _____ Date: _____

A random sample of 300 AP Statistics students revealed that 92% of them wanted to take the AP Exam. A separate random sample of 200 AP Calculus students revealed that 89% of them wanted to take the AP Exam. Construct and interpret a 90% confidence interval for the true difference of proportions of all AP Statistics students and all AP Calc students who want to take the AP Exam.

STATE:

Parameter:

Confidence level:

PLAN:

Name of procedure:

Check conditions:

DO:

General Formula:

Specific Formula:

Work:

Answer:

CONCLUDE:

Based on the confidence interval, do we have convincing evidence that there is a difference in proportions of all AP Statistics students and all AP Calc students who want to take the AP Exam. Explain.

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Confidence Intervals for Proportions

Important ideas:

Check Your Understanding

Researchers are studying the distribution of subscribers to a certain streaming service in different populations. From a random sample of 200 people in City C, 34 were found to subscribe to the streaming service. From a random sample of 200 people in City K, 54 were found to subscribe to the streaming service. Assuming all conditions for inference are met, which of the following is a 90 percent confidence interval for the difference in population proportions (City C minus City K) who subscribe to the streaming service?

- A** $(0.17 - 0.27) \pm 1.65 \sqrt{\frac{0.17}{200} + \frac{0.27}{200}}$
- B** $(0.17 - 0.27) \pm 1.96 \sqrt{\frac{(0.17)(0.83) + (0.27)(0.73)}{400}}$
- C** $(0.17 - 0.27) \pm 1.65 \sqrt{\frac{(0.17)(0.83) + (0.27)(0.73)}{400}}$
- D** $(0.17 - 0.27) \pm 1.96 \sqrt{\frac{(0.17)(0.83) + (0.27)(0.73)}{200}}$
- E** $(0.17 - 0.27) \pm 1.65 \sqrt{\frac{(0.17)(0.83) + (0.27)(0.73)}{200}}$