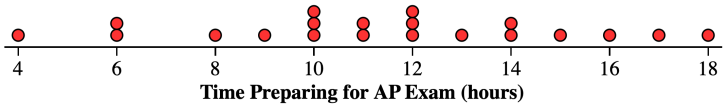
Name: _____ Hour: _____ Date: _____

AP® Statistics

How will You Prepare for the AP Exam?

AP® Calculus

A random sample of 20 AP Statistics students from last year was asked to share the number of hours they spent preparing for the AP Exam. Here are the results:



Time Preparing for AP Exam (hours)

n	mean	SD	min	Q_1	med	Q_3	max
20	11.4	3.719	4	9.5	11.5	14	18

Construct and interpret a 95% confidence interval for the true mean number of hours spent preparing for the AP Exam for all of last year's AP Statistics students.

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 20 AP Statistics students from last year revealed that they spent an average of 11.4 hours preparing for the AP Exam, with a standard deviation of 3.72 hours. A separate random sample of 40 AP Calculus students from last year revealed an average of 9.1 hours preparing for the AP Exam, with a standard deviation of 2.94 hours.

Construct and interpret a 90% confidence interval for the true difference of mean number of hours spent preparing for the AP Exam for all of last year's AP Stats and AP Calc students.

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 AP Statistics students studied more than AP Calc students on average. Explain.

Name: _____ Hour: _____ Date: _____

Confidence Intervals for Means

Important ideas:

Check Your Understanding

A soda manufacturer claims that its Cherry Fizz soda has more carbonation than a competitor's Cherry Eclipse soda. Bottles of both types of soda are opened, covered with a balloon, and then shaken. The diameter of each balloon is then measured. The mean balloon diameters are 2.3 inches for the Cherry Fizz soda and 2.1 inches for the Cherry Eclipse soda. A 90 percent confidence interval to estimate the difference in mean diameters, in inches, is $(-0.8, 1.2)$. Which of the following claims is supported by the interval?

A Because 2.3 inches is larger than 2.1 inches, the manufacturer is correct, and Cherry Fizz has more carbonation.

B Because the interval has more positive values than negative values, Cherry Fizz has more carbonation.

C Because 2.3 and 2.1 are very similar, there is no difference in the mean carbonation levels.

D The interval cannot be interpreted because negative measurements are not possible.

E Because the interval contains 0, it is possible that there is no difference in mean carbonation levels.