

# 11.2 Tests About a Difference in Means

Michael Brodskiy

Instructor: Mr. Thompson

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Statistics AP-Thompson-Year-12462 (66479) > Activities and Due Dates > 11.2 Tests about a difference in means

1 of 19 Questions Assignment Score: 98.2%

Question 1 of 19 95% Correct

Question 2 of 19 100% Correct

Question 3 of 19 100% Correct

Question 4 of 19 100% Correct

Question 5 of 19 100% Correct

Question 6 of 19 100% Correct

Question 7 of 19 100% Correct

Question 8 of 19 100% Correct

Question 9 of 19 90%

Question 10 of 19 90%

Question 11 of 19 90%

Question 12 of 19 90%

Question 13 of 19 90%

Question 14 of 19 90%

Question 15 of 19 90%

Question 16 of 19 90%

Question 17 of 19 90%

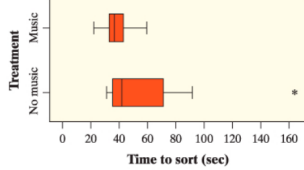
Question 18 of 19 90%

Question 19 of 19 90%

Question 1 of 19

Student researchers Adam, Edward, and Kian wondered if music would affect performance for certain tasks. To find out, they had student volunteers sort a shuffled set of 26 playing cards by face value and by color. Nineteen of the 38 volunteers were randomly assigned to listen to music during the sorting, while the others listened to no music. Shown are parallel boxplots of the time in seconds that it took to sort the cards for the students in each group.

Do these data give convincing evidence of a difference in the true mean sorting times at the  $\alpha = 0.10$  significance level?



Treatment

Music

No music

Time to sort (sec)

State appropriate hypotheses for performing a significance test. Be sure to define the parameters of interest.

☐  $H_0 : \mu_1 - \mu_2 \neq 0, H_a : \mu_1 - \mu_2 = 0$ , where  $\mu_1$  = the true mean time it would take to sort the cards for students like these while listening to music and  $\mu_2$  = the true mean time it would take to sort the cards for students like these while not listening to music.

☐  $H_0 : \mu_1 - \mu_2 > 0, H_a : \mu_1 - \mu_2 = 0$ , where  $\mu_1$  = the true mean time it would take to sort the cards for students like these while listening to music and  $\mu_2$  = the true mean time it would take to sort the cards for

Solved