

Name: Key Hour: _____ Date: _____

Does listening to music improve GPA?

RANDOM SAMPLE?
RANDOM ASSIGNMENT?



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Here are six proposed studies for investigating the question of the day. Suppose that for each of the proposed studies, we found that the mean GPA of students who listen to music is significantly higher than the mean GPA of students who didn't listen to music. What conclusion can we make?

NO NO

1. Get all the students in your statistics class to participate in a study. Ask them whether or not they study with music on and divide them into two groups based on their answer to this question.

Conclusion: For the students in this study, there is an association between whether or not students listen to music while studying and GPA.
D

YES NO

2. Select a random sample of Seniors from your school to participate in a study. Ask them whether or not they study with music on and divide them into two groups based on their answer to this question.

Conclusion: For the Seniors in this school, there is an association between whether or not students listen to music while studying and GPA.
B

YES NO

3. Select a random sample of students from your school to participate in a study. Ask them whether or not they study with music on and divide them into two groups based on their answer to this question.

Conclusion: For the students in this school, there is an association between whether or not students listen to music while studying and GPA.
F

NO YES

4. Get all the students in your statistics class to participate in a study. Randomly assign half of the students to listen to music while studying for the entire semester and have the remaining half abstain from listening to music while studying.

Conclusion: For the students in this study, listening to music while studying causes GPA to increase.
A

YES YES

5. Select a random sample of Seniors from your school to participate in a study. Randomly assign half of the students to listen to music while studying for the entire semester and have the remaining half abstain from listening to music while studying.

Conclusion: For the Seniors in this school, listening to music while studying causes GPA to increase.
C

YES YES

6. Select a random sample of students from your school to participate in a study. Randomly assign half of the students to listen to music while studying for the entire semester and have the remaining half abstain from listening to music while studying.

Conclusion: For the students in this school, listening to music while studying causes GPA to increase.
E

RANDOM SAMPLE → SO WE CAN GENERALIZE TO THE POPULATION FROM WHICH THE SAMPLE WAS SELECTED

RANDOM ASSIGNMENT → SO WE CAN SHOW CAUSATION