Type I and Type II Errors: Vartanian

All of the following questions assume that you are able to know the true relationship between variables in the population. In reality, you are very unlikely to know population relationship. For each item, indicate whether a mistake has been made or not. If an error was made, indicate the type of error.

1. You have taken a sample of students from schools in an inner city. You have found a significant relationship between student smoking and student gender, and you reject the null hypothesis. You know that in the population there is a relationship between gender and smoking.

2. In the population, you know that there is no relationship between teenage out-of-wedlock births and adult welfare receipt. In a sample of 50 teenagers you find a relationship between out-of-wedlock teenage births and adult welfare receipt. You are able to reject the null hypothesis at the .05 level.

3. You use a sample of dog owners and fail to reject the null hypothesis at the 5% level that there is no relationship between owning a dog and miles walked per week by the owner. In the population, there is a relationship between owning a dog and miles walked per week by the owner.

4. In the population, there is a relationship between being Asian-American and wanting to be informed of having a terminal illness. In your sample, you are able to reject the null hypothesis at the .05 level that there is a relationship between these two variables.

5. In your sample, you find a relationship between maximum state welfare payments and length of time spent on welfare. You are able to reject the null hypothesis at the 5% level. In the population, there is no relationship between maximum state welfare payments and time spent on welfare.

6. You take a random sample of 1,000 U.S. households and find a relationship between depression and the amount of sunlight in the home. You are able to reject the null hypothesis at the .05 level. In the population, there is not a relationship between depression and the amount of sunlight in the home.
Answers:

1. None
2. Type I
3. Type II
4. None
5. Type I
6. Type I