Assuming a standard context, label each of the following arguments as deductive or inductive. Explain what it is about the words or form of argument that indicates whether or not each argument is intended or claimed to be valid. If itis not clear whether the argument is inductive or deductive, say why.

1. The sun is coming out, so the rain will probably stop soon.

Inductive. While is may be rare that it doesn’t rain when the sun is out, that is not always true.

1. It’s going to rain tomorrow, so it will either rain or be clear tomorrow.

Inductive. It sounds like the inferred meaning is that forecasting the whether isn’t an exact science. So even though it’s supposed to rain tomorrow, it could be clear.

1. No woman has ever been elected president. Therefore, no woman will ever be elected president.

Inductive. The first sentence is a strength claim.

1. Diet cola never keeps me awake at night. I know because I drank it just last night without any problems.

Inductive. The dude is going off a sample size of 1! He is using a very weak strength claim.

1. The house is a mess, so Jeff must be home from college.

Inductive. There is strong evidence to suggest that Jeff is messy.

By asking the preceding questions, specify what, if anything, is wrong with the following statistical generalizations:

Please IGNORE the given instructions and instead use these instructions:

* First, identify the reference class.
* Second, identify the sample class.
* Third, evaluate the Generalizations using the standards we have for S.G.s
  + (sample size, sample bias, bias in investigation, bias in interpretation)
  + Let me know if the argument is meeting the standard or not and *explain* your answers as much as you can (explanation will be key on the exam!).

1. I have lots of friends. Most of them think that I would make a great president. So most Americans would probably agree.

Reference Class: Americans

Sample: “lots of friends”

Not meeting the standard. The sample size of “lots of friends” is far too small compared to the population of Americans. The sample is biased because it is from a specific group of people (friends) and that the group of people are of a group that is predisposed to answering in the affirmative. That being said, it is probably safe to assume that the results were read correctly.

1. In exit polls after people had just voted, most people told our candidate that they voted for her, so probably most people did vote for her.

Reference Class: Voters

Sample: People who just voted at polling stations

Not meeting the standard. The sample size of people who just voted seems pretty good, assuming they able to get a high percentage of people at the polls. There doesn’t seem to be anything that suggest a biased sample. However, the sampling procedure is biased because it does not include absentee or online voting. The difference between people who vote in person versus absentee/online suggests a difference in demographics that could skew that outcome. This could mean the results were misinterpreted.

1. Mary told me that all of her older children are geniuses, so her baby will probably be a genius, too.

Reference Class:

Sample:

1. When asked whether they would prefer a tax break or a bloated budget, almost everyone said that they wanted a tax break. So a tax break is overwhelmingly popular with the people.

Reference Class:

Sample:

1. When hundreds of convicted murderers in states without the death penalty were asked whether they would have committed the murder if the state had a death penalty, most of them said that they would not have done it. So most murders can be deterred by the death penalty.

Reference Class:

Sample:

For each of the following statistical applications, identify the reference class, and then evaluate the strength of the argument in terms of the percentages or proportions cited and the relevance of the reference class.

4. Three percent of socialists with blue eyes voted for McCain. Maureen is a socialist with blue eyes. Maureen did not vote for McCain.

5. Ninety-eight percent of what John says is true. John said that his father is also named John. John’s father is named John.

6. Ninety-eight percent of what John says is true. John said that the Giants are going to win. The Giants are going to win.

7. Half the time he doesn’t know what he is doing. He is eating lunch. He does not know that he is eating lunch.

8. Most people do not understand quantum mechanics. My physics professor is a person. My physics professor probably does not understand quantum mechanics.

9. Almost all birds can fly. This penguin is a bird. This penguin can fly.

Which of the following claims are true? Which are false?

1. Being a car is a sufficient condition for being a vehicle.

2. Being a car is a necessary condition for being a vehicle.

3. Being a vehicle is a sufficient condition for being a car.

4. Being a vehicle is a necessary condition for being a car.

14. Driving seventy-five miles per hour (for fun) is a sufficient condition for violating a legal speed limit of sixty-five miles per hour.

15. Driving seventy-five miles per hour (for fun) is a necessary condition for violating a legal speed limit of sixty-five miles per hour.

16. Cutting off Joe’s head is a sufficient condition for killing him.

17. Cutting off Joe’s head is a necessary condition for killing him.

18. Cutting off Joe’s head and then holding his head under water for ten minutes is a sufficient condition for killing him.

For each of the following tables determine

a. Which, if any, of the candidates—A, B, C, or D—is not eliminated by the sufficient condition test as a sufficient condition for target feature G?

b. Which, if any, of the candidates—A, B, C, or D—is not eliminated by the necessary condition test as a necessary condition for target feature G?

c. Which, if any, of the candidates—A, B, C, or D—is not eliminated by either test?

EXAMPLE:   
Case 1: A B ~C D ~G

Case 2: ~A B C D G

Case 3: A ~B C D G

a. Only C passes the SCT.

b. Only C and D pass the NCT.

c. Only C passes both tests.

1. Case 1: A B C D G

Case 2: ~A B ~C D ~G

Case 3: A ~B C ~D G

2. Case 1: A B C ~D G

Case 2: ~A B C D G

Case 3: A ~B C ~D G

3. Case 1: A B C D ~G

Case 2: ~A B C D G

Case 3: A ~B C ~D G

4. Case 1: A B ~C D G

Case 2: ~A ~B C D G

Case 3: A B ~C ~D ~G

5. Case 1: A ~B C D ~G

Case 2: ~A B C ~D ~G

Case 3: A ~B ~C D G

6. Case 1: A B ~C D G

Case 2: ~A ~B C D ~G

Case 3: A ~B C ~D ~G

7. Case 1: A B ~C D ~G

Case 2: ~A B ~C D ~G

Case 3: A B ~C ~D ~G

8. Case 1: A B C D ~G

Case 2: ~A ~B C D G

Case 3: A ~B ~C ~D ~G

Imagine that your desktop computer system won’t work, and you want to find out why. After checking to make sure that it is plugged in, you experiment with a new central processing unit (CPU), a new monitor (MON), and new system software (SSW) in the combinations on the table below. The candidates for necessary conditions and sufficient conditions of failure are the plug position (in or out), the CPU (old or new), the monitor (old or new), and the soft-ware (old or new). For each candidate, say (1) which cases, if any, eliminate it as a sufficient condition of your computer’s failure and (2) which cases, if any, eliminate it as a necessary condition of your computer’s failure. Which candidates, if any, are not eliminated as a sufficient condition of failure? As a necessary condition of failure? Does it follow that these candidates are necessary conditions or sufficient conditions of failure? Why or why not?

Plug CPU Monitor Software Result  
Case 1 In Old CPU Old MO Old SW Works  
Case 2 In Old CPU Old MO New SW Works  
Case 3 In Old CPU New MO Old SW Fails  
Case 4 In Old CPU New MO New SW Works  
Case 5 In Old CPU Old MO Old SW Works  
Case 6 In Old CPU Old MO New SW Works  
Case 7 In Old CPU New MO Old SW Fails  
Case 8 In Old CPU New MO New SW Works  
Case 9 In New CPU Old MO Old SW Fails  
Case 10 In New CPU Old MO New SW Works  
Case 11 In New CPU New MO Old SW Fails  
Case 12 In New CPU New MO New SW Works

For each of the following explanations, specify which standard of a good ex-planation, if any, it violates. The standards require that a good explanation be explanatory, deep, powerful, falsifiable, modest, simple, and conservative. A single explanation might violate more than one standard.

1. Although we usually have class at this time in this room, I don’t see any-body in the classroom, because a wicked witch made them all invisible.

2. Although we usually have class at this time in this room, I don’t see any-body in the classroom, because they all decided to skip class today.

3. Although we usually have class at this time in this room, I don’t see any-body in the classroom, because it’s Columbus Day.

4. My house fell down, because it was painted red.

5. My house fell down, because of a powerful earthquake centered on my property that did not affect anything or anybody else.

6. My house fell down, because its boards were struck by a new kind of sub-atomic particle.

7. Although I fished here all day, I didn’t catch any fish, because there are no fish in this whole river.

8. Although I fished here all day, I didn’t catch any fish, because the river gods don’t like me.

9. Although I fished here all day, I didn’t catch any fish, because I was unlucky today.

10. That light far up in the night sky is moving quickly, because it is the daily United Airlines flight from Boston to Los Angeles.

11. That light far up in the night sky is moving quickly, because it is an alien space ship.

12. That light far up in the night sky looks like it is moving quickly, because there’s something wrong with my eyes right now.

Using the criteria mentioned above, evaluate each of the following arguments as strong or weak. Explain your answers. Be sure to specify the properties on which the analogy is based, as well as any background beliefs on which your evaluation depends.

1. This landscape by Cézanne is beautiful. He did another painting of a similar scene around the same time. So it is probably beautiful, too.

2. My aunt had a Siamese cat that bit me, so this Siamese cat will probably bite me, too.

3. The students I know who took this course last year got grades of A. I am a lot like them, since I am also smart and hardworking; and the course this year covers very similar material. So I will probably get an A.

4. This politician was caught cheating in his marriage, and he will have to face similarly strong temptations in his public duties, so he will probably cheat in political life as well.

5. A very high minimum wage led to increased unemployment in one country. That country’s economy is similar to the economy in a different country. So a very high minimum wage will probably lead to increased unemployment in the other country as well.

6. I feel pain when someone hits me hard on the head with a baseball bat. Your body is a lot like mine. So you would probably feel pain if I hit you hard on the head with a baseball bat. (This is related to the so-called “Problem of Other Minds.”)

7. It is immoral for a doctor to lie to a patient about a test result, even if the doctor thinks that lying is in the patient’s best interest. We know this because even doctors would agree that it would be morally wrong for a financial adviser to lie to them about a potential investment, even if the financial advisor thinks that this lie is in the doctor’s best interests.

8. Chrysler was held legally liable for damages due to defects in the suspension of its Corvair. The defects in the Pinto gas tank caused injuries that were just as serious. Thus, Ford should also be held legally liable for damages due to those defects.