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**Read the following arguments and determine whether they use inductive or deductive reasoning:**

1. Since today is Friday, tomorrow will be Saturday.

  Deductive  

2. Since it snowed every New Year's Day for the past four years it will snow on New Year's Day this year.

  Inductive  

3. A child examines ten tulips, all of which are red, and concludes that all tulips must be red.   Inductive  

4. If an isosceles triangle has at least two sides congruent, then an equilateral triangle is also isosceles.

  Deductive  

5. Sandy earned A's on her first six geometry tests so she concludes that she will always earn A's on geometry tests.

  Inductive  

6. If  $5x = 25$ , then  $x = 5$ .

  Deductive  

## Inductive Reasoning Practice

Now it is your turn to play detective and use your reasoning skills to draw logical inferences. Read carefully the information you are given (the premises) and consider what would be the most logical conclusion to draw from that evidence.

1. Every summer, when the cotton wood trees bloom, you start to sneeze and your eyes water and itch. This morning, you saw a few cotton wood blossoms floating by. You can therefore logically conclude that:

a. summer has just officially started

- b. you had better go out and buy some tissues
- c. there are more cotton wood trees in the area than any other species

\*Response: **1.b**

2. Each time you go to your city's biggest department store, you end up buying far more than you had planned on. You carefully make a list and plan to spend \$25, but usually spend twice that amount. You can therefore logically conclude that:

- a. the department store charges too much for its products
- b. you need more items than you had originally thought '
- c. a need for immediate gratification is one of your main traits

\*Response: **2.c**

3. For the past six months, you have gotten a massage. The therapist advises you to drink a big glass of water after each session, but you never do. Following each massage, you get a terrible headache. You can therefore logically conclude that:

- a. massages cause massive dehydration
- b. not drinking water is a serious health hazard
- c. massages may very likely give you headaches

\*Response: **3.c**

4. Your older brother gave you a coffee pot for Christmas. Every time you brew a pot of coffee, it tastes scalded. You have tried several brands of coffee but it doesn't make any difference. You can therefore logically conclude that:

- a. there is a malfunction with the coffee pot
- b. it is time for you to stop drinking coffee
- c. the type of coffee makes a big difference

\*Response: **4.a**

5. Every June, your Aunt Patricia sends you a birthday check in the mail. Every July, your Uncle Ian sends you a check with a belated birthday card. When you go out to the mailbox on June 16, there is an envelope with your name on it waiting inside. You can therefore logically conclude that you are getting:

- a. a check early from your Uncle Ian
- b. Aunt Patricia's card
- c. a letter from a friend

\*Response: **5.b**

# Deductive Reasoning Practice Exercises

## Practice Exercise

1) Which is an example of a deductive argument?

a. There are 25 CDs on the top shelf of my bookcase and 14 on the lower shelf. There are no other CDs in my bookcase. Therefore, there are 39 CDs in my bookcase.

b. Topeka is either in Kansas or Honduras. If Topeka is in Kansas, then Topeka is in North America. If Topeka is in Honduras, then Topeka is in Central America. Therefore, Topeka is in Kansas.

c. No one got an A on yesterday's test. Jimmy wasn't in school yesterday. Jimmy will make up the test today and get an A. Change the following invalid conclusion to make it valid. You have to be 16 years old to get a driver's license. Abby will be 16 years old tomorrow. Therefore, Abby can now buy a car.

d. All human beings are in favor of world peace. Terrorists don't care about world peace. Terrorists bring about destruction.

**\*ANSWER:** The answer is **a**, because it has two premises and a conclusion that follows logically from them. Option **b** has three premises and the conclusion does not follow from them. Options **c** and **d** have conclusions that do not follow the premises.

2) Which of the following would make the best major premise for a deductive argument? Remember that the two important factors for the major premise are:

1. It relates two terms.
2. It is stated as a generalization, rule, or principle.

- a. No one knows if an asteroid will collide with the Earth.
- b. There are no asteroids.
- c. Those who believe asteroids will hit the Earth have overactive imaginations.
- d. Scientists have proven asteroids will not hit the Earth

**\*ANSWER:** The best answer is option **c** since it refers to two terms which are asteroids and imagination. It is also showed off as a generalized fact.

- 3) Change the following invalid conclusion to make it valid. *You have to be 16 years old to get a driver's license. Abby will be 16 years old tomorrow. Therefore, Abby can now buy a car.*

**\*ANSWER:** The conclusion should be: ***Therefore, Abby can now get a driver's license***, since the deductive argument did not state anything about buying a car.

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