Deductive Reasoning

Deductive reasoning involves applying a general rule (specified or implied) to a specific case to reach a specific conclusion.

Example: If you are tardy 3 times, you will be assigned detention. John came in tardy for the third time, therefore John will be assigned detention.

From the following set of numbers {2,4,6,8}, which of the following deductions are true if you are choosing two numbers from the set?

1. Both numbers are divisible by two.
2. One of the two numbers is divisible by 6.
3. The sum of the two numbers is less than 24.
4. The product of the numbers is greater than 84.
5. The product of the two numbers is divisible by 6.
6. The product of the two numbers is divisible by 2.
7. Each number is a factor of 240.
8. The square of at least one of the numbers is greater than 50.

Identify the type of reasoning, inductive or deductive, that is illustrated in each of the following.

9. If a number is less than 12, then three times that number is less than 36.

10. The first three times Sally ate strawberries, she broke out in a rash. She concluded she was allergic to strawberries.

11. The wrestling coach said, "Anyone who misses 2 practices unexcused will be dropped from the team. Bill cut practice for three days. Bill said, "I'm off the team."

12. Our family went water skiing in June, July, and August. Our 5 year old stated, "We go water skiing every month."

13. Bob is taller than Jeff. Bob sees that Jeff is taller than Xavier; Bob concludes that he is taller than Xavier.

14. Peggy is 13 years old. She concludes that in 5 years, she will be able to vote.