Quiz 2.7: Logical Equivalence of Statements

Multiple Choice: *Choose the letter that corresponds to the correct answer. Write the answer in your notebook.*

1. The process of observing data, recognizing patterns, and making generalizations from observations is called:
   A. Deductive reasoning
   B. Detachment
   C. Inductive reasoning
   D. Syllogism

2. The type of reasoning which makes use of accepted rules of logic and general statements to arrive at a conclusion is called:
   A. Deductive reasoning
   B. Detachment
   C. Inductive reasoning
   D. Syllogism

3. Any example that shows a statement is false is called:
   A. Contra-example B. Counterexample C. False example D. Inverse example

4. The conclusion drawn from observations, examples and pattern is called:
   A. Conjecture B. Detachment C. Hypothesis D. Syllogism

5. Which of the following statements is false when the original conditional statement is false?
   A. Conditional B. Contrapositive C. Converse D. If-then statement

6. Which of the following arguments employs deductive reasoning?
   A. S, M, T, W, T, ____, S. The letter in the blank must be F.
   B. 5,10,15, 20. The next number is 25.
   C. J, F, M, A, M, ____, J. The letter in the blank must be J.
   D. All piano players are musicians. Fred is a piano player. Therefore, Fred is a musician.

7. Which of the following statements is logically equivalent to the inverse statement?
   A. Conditional B. Contrapositive C. Converse D. If-then statement

8. Use inductive reasoning to find the next two terms of the sequence 1, 3, 9, 27, ____, ____.
   A. 36, 45 B. 36, 63 C. 54, 108 D. 81, 243

9. Supply the conclusion for the given hypothesis: If $\angle 1 \cong \angle 2$, then ____.
   A. $\angle 1$ and $\angle 2$ are complementary.
   B. $\angle 1$ and $\angle 2$ are supplementary.
   C. $\angle 1$ and $\angle 2$ form a linear pair.
   D. $\angle 1$ and $\angle 2$ have the same measure.

10. Complete the following syllogism:
    Major Premise: If you are a good citizen, then you obey traffic rules.
    Minor Premise: Aaron is a good citizen.
    Conclusion: Therefore, ____.
    A. Aaron is a Filipino.
    B. Aaron has a car.
    C. Aaron obeys traffic rules.
    D. Aaron pays his taxes.

Answer Key

1. The process of observing data, recognizing patterns, and making generalizations from observations is called:

   Solution:

   A. Deductive reasoning B. Detachment C. Inductive reasoning D. Syllogism

2. The type of reasoning which makes use of accepted rules of logic and general statements to arrive at a conclusion is called:

   Solution:

   A. Deductive reasoning B. Detachment C. Inductive reasoning D. Syllogism

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   Solution:

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   Solution:

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   Solution:

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6. Which of the following arguments employs deductive reasoning?

   Solution:

   A. S, M, T, W, T, ____, S. The letter in the blank must be F.

   B. 5,10,15, 20. The next number is 25.

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   D. All piano players are musicians. Fred is a piano player. Therefore, Fred is a musician.

7. Which of the following statements is logically equivalent to the inverse statement?

   Solution:

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8. Use inductive reasoning to find the next two terms of the sequence 1, 3, 9, 27, ____, ____.

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Solution:

A. Aaron is a Filipino.

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