

Name _____

Date _____

Logic- Disjunction, Conditional and Bi conditional - Guided Lesson

Explanation:

Explanation # 1

When you see “if and only if”, you are working with a biconditional.

Biconditionals are true when both facts have the same truth value. To be true, biconditional statements both have to be true or false.

If one statement is true and the other false, the truth value is false.

Let's look at the truth value of each statement:

2 is an even number; True (T)

right triangles have one right angle; True (T).

Since the first fact is true and the another fact is also true, the entire sentence is true. So, the answer is true.

Explanation # 2

We are working with an if-then statement. These are called conditionals.

Conditionals are only false when the “if” section is true and the “then” conditional is false. In any other case of a conditional, the truth value is true.

Time to take a look at the truth values of each statement

Paris is the capital of France; True (T) Delhi is the capital of India; True (T)

Since the first fact is true and the another fact is also true, the entire sentence is true. So, the answer is true.

Explanation # 3

We have a biconditional again, just like problem number one. We can tell this because the statement has an “if and only if”. The overall truth is only true if both statements have the same truth value; otherwise the statement is false. Time to look at the truth values of each statement:

5 is an even number; False (F)

Each angle of equilateral triangle is not 90° ; True (T).

Since the first fact is false and the second fact is also true, the entire sentence is false.

