**Examine the following example of a two-column proof argument:**

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
|  | 1. Given
 |
|  | 1. Addition Property of Equality
 |
|  | 1. Multiplication Property of Equality
 |

**Following, is an example of this proof in a flow chart format:**

**IF**

Addition Property of Equality

Multiplication Property of Equality

**THEN**

**IF**

**THEN**

* A proof is a series of SPECIFIC CONJECTURES.
* Each statement serves as the HYPOTHESIS for the statement that follows. The statement that follows is the CONCLUSION.
* Your job is to find the GENERALIZATION of the SPECIFIC CONJECTURE.
* The statements you write are examples of the **definitions, postulates or theorems** you have studied.
* The name of the definition, postulate or theorem is what goes in the REASONS column.
* This reason justifies what is happening in the statements of the proof

**Use the diagram below for the following exercises.**



|  |  |
| --- | --- |
| **A.****General Statement:**If two angles are complementary, then their sum is 90 degrees.**Specific Conjecture:****If** is complementary to , **then**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**Reason:** | **B.** **General Statement:**If the measures of two smaller adjacent angles are added together, their sum is the measure of the larger angle formed by their non-adjacent sides.**Specific Conjecture:****If** theis adjacent to , then\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**Reason:** |
| **C.** **General Statement:**If the measure of an angle is 90 degrees, then the angle is a right angle.**Specific Conjecture:****If\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, **then**  is a right angle.**Reason:** | **D.** **General Statement:**If the intersection of two line segments forms a right angle, then the line segments are perpendicular.**Specific Conjecture:****If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_.****Reason:** |

Now, use the work you did on the previous page to complete the proof below.

Remember, your specific conjectures are your statements. Step 3 is shaded because there is an extra step that you must add in order for the chain of reasoning to work…Can you figure out what that step must be?

Given: is complementary to

Prove: 

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1. is complementary to

 | 1. Given
 |
|  | 1.
 |
|  | 1.
 |
|  |  |
|  |  |
|  |  |