Introduction to Logical Reasoning Workshop on (reating Valid And Invalid Arguments

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Are you done with Part I of the workshop?

(A) No.
(B) Yes.
(C) Yes!
(D) Yes!!
(E) Yes yes yes, already!

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Part 1, Problem 1 Solution

A valid argument with one true premise, one false premise, and a false conclusion:

Qatar has more people than Bahrain. [*True*]
 Bahrain has more people than Iran. [*False*]

: Qatar has more people than Iran. [False]

The transitivity of "more people than" reveals that assuming the truth of the premises guarantees the truth of the conclusion. So it is a *valid* argument.

Part 1, Problem 2 Solution

An invalid argument with two false premises and a true conclusion:

Bahrain has more people than Qatar. [False]
 Qatar has more people than Iran. [False]

: Iran has more people than Qatar. [*True*]

This is *invalid*. Assuming premises 2 is true means that it is absolutely impossible that the conclusion could be true.

Question 6

Are you done with Part II of the workshop?

(A) No.
(B) Yes.
(C) Yes!
(D) Yes!!
(E) Yes yes yes, already!

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Part 2, Problem 1 Solution

An invalid argument with two true premises and a true conclusion:

Qatar has more people than Bahrain. [*True*]
 Iran has more people than Bahrain. [*True*]

: Iran has more people than Qatar. [*True*]

This is *invalid*. It is perfectly possible to assume the premises are true while the conclusion is false without a contradiction.

Part 2, Problem 2 Solution

An valid argument with two false premises and a true conclusion:

Syria has more people than any GCC member. [False]
 Israel is a member of the GCC. [False]

: Syria has more people than Israel.

This is *valid*. Assuming that both premises are true, then the conclusion must be true as well.

True

Part 2, Problem 1 Solution

A valid argument with two true premises and a false conclusion:

This is *impossible* to construct! This is because if an argument is valid and its premises are in fact true, then the conclusion must be true!

Recall that a valid argument with two true premises is a *sound* argument. And a sound argument gives us a 100% guarantee of the truth of its conclusion.



You begin the journey into formal logic by learning how to transform statements from English into the symbols of logic.

Also, please don't forget to turn in your response to the Workshop #4 Questionnaire on your way out.

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