III. Disjunctive Syllogism

Also known as "Modus Tollendo Ponens" or "Eliminating Alternative Hypotheses."

A. General Form

p or *q*	\<where *p* and *q* are the only possibilities\>	*p* or *q*
not *p*		not *q*
Therefore, *q*		Therefore, *p*

B. Example

Either you complete the last assignment or you fail the course.
You didn't complete the last assignment.
Therefore, you fail the course.

C. Alternate forms

1. Either *A* or *B* or *C*. (*A*, *B*, and *C* the only three possibilities.)
Neither *B* nor *C*.
Therefore, *A*.
Example:
Either Ellie or Richards or the gardener committed the murder.
Richards was out of town, and the gardener also has an alibi.
So Ellie is the murderer.

2. Either *A* or *B* or *C*.
Not *C*.
Therefore, *A* or *B*.
Example:
Either Ellie or Richards or the gardener committed the murder.
The gardener has an alibi.
That narrows it down to Ellie and Richards.

D. Additional examples

1. Stan: "The Lions can win the division Sunday if they beat the Packers in the late game or the Vikings lose the early game."
After the early game, Stan says: "The Vikings won. So our only hope is to beat the Packers."

2. Mother to son: "You told me you had to complete the last assignment or you'd fail the course. I see here on your report card that you passed the course. So congratulations on completing that last assignment."

3. Wife to husband: "I'm thinking about Italy, Greece, or France for our vacation this summer."
Husband: "Any of those three is fine with me."
Wife to husband the next day: "I went online and checked out those three countries. Greece and France are too expensive for our budget."
Husband: "Italy, here we come."

4. Senior year, we can choose one of three electives: Computer Science, Chemistry II, or Creative Writing. I'm a lousy writer. So I guess I'll take either Computer Science or Chemistry II.

E. Fallacy Associated with the Disjunctive Syllogism

Non-exclusive OR Fallacy

General Form

p or *q* (when p and q are not the only possibilities)
p
Therefore, not *q*

Example of the Fallacy
Either you're handsome or you're intelligent.
You're handsome.
So you're not intelligent.

Explanation: Being handsome does not exclude being intelligent and vice-versa. The first premise is an **inclusive OR** statement, meaning that both parts could be true (or neither). So the fact that one of the two stated possibilities is true does not exclude the other from being true.

The trick is deciding whether p and q (and possibly r as well) are the *only* alternatives. Question-writers will follow this rule:

Any alternatives listed for *p* and *q* (and possibly *r*) will be assumed to be mutually exclusive and cover all the alternatives. Otherwise, players must judge a *premise* of the argument rather than the *conclusion*.