

Deductive Reasoning

title

**Deductive reasoning**—using facts, definitions, accepted properties, and laws of logic to form a logical argument.

**FACTS**

deductive reasoning

**Law of Detachment**

Start with a true conditional statement and the hypothesis of the statement is true (or occurs).

Then the conclusion must be true (or occurs).

If a student is tardy to class, then he or she will receive detention.  
Nicole was tardy to Geometry.

What can you conclude?  
Nicole gets detention.

law of detachment

Make a valid conclusion, if possible.

If Roger earns straight A's this semester, then his parents will give him a car. Roger earned A's in all of his classes this semester.

Roger gets a car.

If Stacy misses the bus, then she must walk to school. Stacy walks to school.

Not Valid

examples

**Law of Syllogism** *Chain Rule*

If  $p \rightarrow q$  and  $q \rightarrow r$  are true conditional statements, then  $p \rightarrow r$  is true.

Basically, we are combining two or more true statements into one by cutting out the repeated phrases.

If Tabi is sick, then ~~she cannot go to her volleyball match~~.  
 If ~~Tabi cannot go to her volleyball match~~, then her volleyball team will have to find a substitute to fill her position.

What statement follows from these two statements?

law of syllogism

Write the statement that follows from the pair of true statements.

If Lane gets PM detention, then she will have to walk home.  
 If Lane is tardy to class again, then she will get PM detention.

~~If Lane is tardy then PM detention.~~  
~~If PM detention then walk.~~  
**If Lane is tardy then walk Home.**

If Thomas is absent from school today, then he will have to make up a test.  
 If Thomas is absent from school today, then he will have to stay late after school tomorrow.

*Not Valid*

examples

**Conclusion**

1. What is Deductive Reasoning? *Facts*

2. Give an example for the Law of Detachment. *If you clean room then go to mall*  
*Clean Room*  
*Go to Mall.*

3. Give an example for the Law of Syllogism. *If absent then make up work*  
*If make up work then you are cranky*  
*If absent then cranky*

4. Questions????

Sep 25-9:04 AM

**Assignment**

**Deductive Wkst**

Sep 25-9:07 AM