

some logical concepts

An argument is a sequence of sentences, the last of which (the *conclusion*) is supposed to follow from the others (the *premises*).

D1: Argument A is **valid** =df. in virtue of A's logical form, A's conclusion must be true, if A's premises are all true.

D2: Argument A is **sound** =df. (1) A is valid, and (2) all of A's premises are true.

some valid logical forms

Modus Ponens		Modus Tollens	
1. P	1. if P, then	1. if P, then Q	1. not-Q
2. if P, then Q	2. P	2. not-Q	2. if P, then Q
3. therefore, Q	3. therefore, Q	3. therefore, not-P	3. therefore, not-P

Multiple Modus Ponens

1. P
2. if P, then Q
3. if Q, then R
4. therefore, R

Constructive Dilemma

1. P or not P
2. if P then Q
3. if not-P, then Q
4. therefore, Q

some sample arguments

1. Everyone believes that it's wrong to eat salty food.
2. If everyone believes that it's wrong to eat salty food, then it's wrong to eat pickles.
3. Therefore, it's wrong to eat pickles.

1. The Bible says that it's wrong to murder innocent children.
2. The Bible is the word of God.
3. Therefore, it's wrong to murder innocent children.

1. Either it will rain or it won't.
2. (Even) If it rains then it will be hot outside.
3. If it does not rain then it will be hot outside.
4. Therefore, it will be hot outside.

some valid arguments

1. If there is life on Mars, then there is life on other planets.
2. There is life on Mars.
3. Therefore, there is life on other planets. (1,2 MP)

1. If there is no God, then all things are permitted.
2. There is no God.
3. Therefore, all things are permitted. (1,2 MP)

1. If the butler did it, then his fingerprints are on the gun.
2. It's not the case that his fingerprints are on the gun.
3. Therefore, it's not the case that the butler did it. (MT)

1. If it is raining, then the streets are wet.
2. It's not the case that the streets are wet.
3. Therefore, it's not the case that it is raining. (MT)

some invalid arguments

1. If it is raining, then the streets are wet.
2. It is Tuesday.
3. Therefore, the streets are dry. (invalid)

1. Dick Cheney is the vice president of the United States.
2. Alan Greenspan is the Chairman of the Federal Reserve.
3. Therefore, George W. Bush is the president of the United States. (invalid)

1. If this is a cow, then this is an animal.
2. It's not the case that this is a cow.
3. Therefore, it's not the case that this is an animal. (denying the antecedent; invalid)

1. If this is a cow, then this is an animal.
2. This is an animal.
3. Therefore, this is a cow. (affirming the consequent; invalid)

1. George W. Bush is a republican.
2. Therefore, George W. Bush is anti-abortion. (invalid; a line is missing)

1. Socrates weighed 200 pounds at his death.
2. Therefore, Socrates weighed more than 150 pounds at his death. (invalid; a line is missing)

arguments or not? valid or not? sound or not?

1. The Eiffel Tower is in London.
2. London is in Germany.
3. Germany is in Africa
4. Therefore, the Eiffel Tower is in Africa

1. Plato was a Greek.
2. Plato was a philosopher.
3. Therefore all Greeks are philosophers.

1. If Bush is an honest politician, then he won in Florida.
2. He won in Florida.
3. Therefore Bush is an honest politician.
1. Either the moon is made of green cheese or it is not.
2. Therefore, Hawaii was the fiftieth state admitted to the union.

1. Dolphins are a kind of shark.
2. Sharks have breathing holes.
3. Therefore Dolphins have breathing holes.

1. The sky is blue.
2. Grass is green.
3. Snow is white.

1. Everyone loves my baby.
2. My baby only loves me.
3. Therefore, I am my baby.

1. If your car is out of gas, then your car stops running.
2. Your car is out of gas.
3. Your car stopped running.

(part 1)

1. Either God can heat a burrito so hot that even he could not eat it, or God cannot heat a burrito so hot that even he cannot eat it.
2. If God can heat a burrito so hot that even he cannot eat it, then God is not all powerful.
3. If God cannot heat a burrito so hot that even he cannot eat it, the God is not all powerful.
4. Therefore, God is not all powerful.

(part 2)

5. If God exists then God is all powerful.
6. Therefore, God does not exist.