

Homework #7  
Due Wednesday, October 8  
No late papers accepted! No excuses!

1. Write each of the statements in the form “if...then...”
  - a) All integers are rational numbers.
  
  
  
  
  
  
  
  
  
  
  - b) Jesse will be a liberal when pigs fly.
  
2. For the given direct statement, write the converse, inverse, and contrapositive.  
If you build it, he will come.
  - a) converse
  
  
  
  
  
  
  
  
  
  
  - b) inverse
  
  
  
  
  
  
  
  
  
  
  - c) contrapositive
  
3. Determine whether each argument is valid or invalid with an Euler diagram.
  - a) Some trucks have sound systems.  
Some trucks have gun racks.  
Some trucks with sound systems have gun racks.



5. Match each argument with the law that justifies its validity or the fallacy of which it is an example.

Modus ponens (Law of Direct Reasoning)

Modus tollens (Law of Contraposition)

Law of syllogism

Disjunctive syllogism

Fallacy of the converse

Fallacy of the inverse

a) She sings or she dances.

She does not sing.

She dances.

b) If I hear *Come Saturday Morning*, I think of her.

If I think of her, I get depressed.

I hear *Come Saturday Morning*.

I get depressed.

c) If you use your seat belt, you will be safer.

You don't use your seat belt.

You won't be safer.

d) If Frank sells his quota, he will get a bonus.

Frank sells his quota.

He gets a bonus.

e) If Pedro pitches, the Red Sox wins.

The Red Sox do not win.

Pedro did not pitch.