1.

1. , where  stands for “ is negative”,  stands for “ is positive”.
2. , where  stands for “ is equal to zero”.
3. , where  stands for “ is positive”.
4. , where  stands for “ is positive”.
5. ,  stands for “ is a positive real number”,  stands for “ has exactly 2 square roots”.

2.



3.

There exists 2 different people who do not shop in the same store.

4.

Assume  and  are not even, which means they are odd.

Suppose that .

Then .

Thus,  is odd, which is contradictory to the statement that “ is even”.

Hence,  is even oris even.



5.

Assume the odd number to be .

Then .

Hence, any odd number is the difference of two squares.



I used direct proof.

6.

min(*x*, min(*y*, *z*)) = min(min(*x*, *y*), *z*)

If ,

,

If ,

,

If ,

,

If ,

,

If ,

,

If ,

,

Hence, they are equivalent.



7.

1. 
2. 
3. 
4. 
5. 

8.





9.

1. 
2. 
3. 

10

1. 
2. 
3. 
4. 