

COURSE : DISCRETE MATHEMATICS
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Problem Ex. no : 28

Question:

State the converse, contrapositive, and inverse of each of these conditional statements.

- a) If it snows tonight, then I will stay at home.
- b) I go to the beach whenever it is a sunny summer day.
- c) When I stay up late, it is necessary that I sleep until noon.

Answer:

a) Converse : If I will stay at home, then it snows tonight.
Contrapositive : If I won't stay at home, then it doesn't snow tonight.
Inverse : If it doesn't snow tonight, then I won't stay at home.

b) It can be rewritten as: If it is a sunny summer day, then I go to the beach.
Converse : If I go to the beach, then it is a sunny summer day.
Contrapositive : If I don't go to the beach, then it is not a sunny summer day.
Inverse : If it is not a sunny summer day, then I don't go to the beach.

b) It can be rewritten as: If I stay up late, then it is necessary that I sleep until noon.
Converse : If it is necessary that I sleep until noon, then I stay up late.
Contrapositive : If it is not necessary that I sleep until noon, then I don't stay up late.
Inverse : If I don't stay up late, then it is not necessary that I sleep until noon.