

CHAPTER - 1

SECTION – 1

PROBLEM 28

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.

SOLUTION

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| a) | Converse: | I will stay at home only if it snows tonight. |
| | Contrapositive: | If I don't stay at home, then it will not have snowed tonight. |
| | Inverse: | If it does not snow tonight, then I will not stay at home. |
| | | |
| b) | Converse: | If I go to the beach, then it is a sunny summer day. |
| | Contrapositive: | If I do not go to the beach, then it is not a sunny summer day. |
| | Inverse: | If it is not a sunny summer day, then I do not go to the beach. |
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| c) | Converse: | I sleep until noon only when I stay up late. |
| | Contrapositive: | If I don't sleep until noon, then I did not stay up late. |
| | Inverse: | If I don't stay up late, then I don't sleep until noon. |

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