T4 G1 28 Jan 2022

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$\neg q$	$\neg p$	p	q	$p \to q$	Converse $q \to p$	Inverse $\neg p \to \neg q$	Contrapositive $\neg q \to \neg p$
F	F	T	T	T	T	T	T
T	F	T	F	F	T	T	F
F	T	F	T	T	F	F	T
T	T	F	F	T	T	T	T

$(p \to q) \equiv \neg q \to \neg p$

$q \to p \equiv \neg p \to \neg q$

" If p then q
It is necessary to walk 8 miles to get to the top of the peak "
q
$p \to q$

Or
If you walk 8 miles then you get to the top of the peak.

Converse $q \to p$:- If you get to the top of the peak then you walk 8 miles

Inverse $\neg p \to \neg q$:-
If you cannot walk 8 miles then you will not get to the top of the peak.

" If p then q
You can access the website only if you pay a subscription fee. "
p
$p \to q$

Or If you pay a subscription fee then you can access the website.

Contrapositive $\neg q \to \neg p$:- If you cannot access the website then you didn't pay a subscription fee.

Converse of the statement "If you are honest, then you are respected."

a) If You are honest then he is not respected.

b) If You are not respected than you are not honest.

c) If you are not honest then you are not respected.

d) If you are respected then you are honest.

"Vivek will go swimming unless the water is too cold"

If the water is too cold then vivek will not go swimming

If the water is not too cold then vivek will go swimming.

Inverse

If the water is not too cold then vivek will go swimming.

5. What is the converse of the conditional statement "If it ices today, I will play ice hockey tomorrow.

a) "I will play ice hockey tomorrow only if it ices today."

b) "If I do not play ice hockey tomorrow, then it will not have iced today."

c) "If it does not ice today, then I will not play ice hockey tomorrow."

d) "I will not play ice hockey tomorrow only if it ices today."

Converse ≡ Inverse

7. What are the inverse of the conditional statement " A positive integer is a composite only if it has divisors other than 1 and itself."

a) "A positive integer is a composite if it has divisors other than 1 and itself."

b) "If a positive integer has no divisors other than 1 and itself, then it is not composite."

other than 1 and itself. → p

a) "A positive integer is a composite if it has divisors other than 1 and itself."

b) "If a positive integer has no divisors other than 1 and itself, then it is not composite."

c) "If a positive integer is not composite, then it has no divisors other than 1 and itself."

d) None of the mentioned

A positive integer has divisors other than 1 and itself then it is a composite.

$\neg p \rightarrow \neg q$