Answer on Question #69499 – Math – Discrete Mathematics

Use truth table to test the validity of:

If I study, then I will not fail mathematics

if I don't play basketball, then I will study

But I failed mathematics

Therefore I must have played basketball.

Solution:

A – Fail mathematics

B – Play basketball

C – Study.

-> - implication

A	$C \to \bar{A}$	$\bar{B} \to C$	B
1	1	1	?

If I study, then I will not fail mathematics $<=> C \to \bar{A} = 1$

if I don't play basketball, then I will study $<=> \bar{B} \to C = 1$

But I failed mathematics $<=> A = 1$

$C \to \bar{1} = C \to 0 = \bar{C} = 1 => C = 0$

$\bar{B} \to 0 = B = 1$

That means, that he must have played basketball.

Answer: True.