If – then statements

Now to determine the truth values, I need to think of the conditional statements as a promise.

If a promise is kept, the statement is true.

If the promise is broken, the statement is false.

This is not hard, but I do need you to stay with me on this. Let's say I say to you, "If you are good, then I will take you to the movies."

"You being good" is statement p, and "going to the movies" is statement q.

There are four possibilities.

p	*q*	
T	T	you are good; you go to the movies
T	F	you are good; you don't go to the movies
F	T	you were not good; you go to the movies
F	F	you were not good; you don't go to the movies

Did I break my promise in any one of those cases?

Yes, in the second case, you were good, but you didn't go the movies.

This is important, in the third case you were not good, but I still took you to the movies.

Did I break my promise? No, the promise was not broken.

The promise was not broken in the fourth case either. So the only statement that would be false is statement two.

Here's the truth table.

p	q	$p \rightarrow q$
T	T	T
T	F	F
F	T	T
F	F	T