

Biconditionals

- form new proposition from 2 old ones by saying 1st is true if & only if 2nd is true
- if conditional & converse are true, then we can write as a biconditional
($p \rightarrow q$ is true AND $q \rightarrow p$ is true)
- denote "p if and only if q" by $p \leftrightarrow q$ (iff)

EX → If it is July 4th in the US, then it is American Independence Day

Conv. → If it is American Independence Day, then it is July 4th.

B.C. ⇒ It is July 4th **iff** it is American Independence Day

OR It is American Independence Day **iff** it is July 4th

EX → If you score more points than the other team, then you win the game.

Conv. → If you win the game, then you score more points than the other team

B.C. ⇒ You score more pts than the other team **iff** you win the game

OR You win the game **iff** you score more points than the other team ✓

HW: p. 101 → 8-18 even, 34, 43-46