

12-2 Logic

Statement = any expression that is true or false

P : The Tigers are in the playoffs. True

Q : Mrs. F likes Taco Bell. True

truth value = true or false

negation = the opposite of the statement.

$\sim Q$ Mrs. F does not like Taco Bell False
(not Q)

Conjunction = a compound statement that joins two or more statements with an "and."

$P \wedge Q$: The Tigers are in the playoffs
(P and Q) and Mrs. F likes Taco Bell.

disjunction = a compound statement that joins two or more statements with an "or."

$P \vee q$
(p or q)

The Tigers are in the playoffs
OR Mrs F likes Taco Bell.

ex: 1

p: $9 + 5 = 14$ T

q: February has 30 days. F

r: A square has four sides. T

$P \wedge r$: $9 + 5 = 14$ and a square has 4 sides.

* both parts of a conjunction have to be true for the whole thing to be true. \downarrow
True!

$P \vee \sim q$: $9 + 5 = 14$ or February does not have 30 days. \rightarrow True!

* only one part of a disjunction has to be true for the whole thing to be true.

6th hr:

p. 88

Q# 13-23