

This week:

Today Sec. 1.3 Notes

Tues. work on 1.3 assignment

Wed. Practice Test

Thurs. Go over Practice Test

Fri. Test

Section 1.3 Truth Tables

p : I study for tests

q : I pass the class

p	q	$p \wedge q$	$p \vee q$	$p \rightarrow q$
T	T	T	T	T
T	F	F	T	F
F	T	F	T	T
F	F	F	F	T

p	$\sim p$	$p \vee \sim p$
T	F	T
F	T	T

$$T \wedge T = T$$

$$T \wedge F = F$$

$$F \wedge T = F$$

$$F \wedge F = F$$

$$T \vee T = T$$

$$T \vee F = T$$

$$F \vee T = T$$

$$F \vee F = F$$

$$T \rightarrow T = T$$

$$T \rightarrow F = F$$

$$F \rightarrow T = T$$

$$F \rightarrow F = T$$

ex 1 p20: p : I have a h.s. diploma
 q : I have a full-time job
 $p \vee (q \wedge \sim p)$

P	q	$\sim P$	$q \wedge \sim P$	$P \vee (q \wedge \sim P)$
T	T	F	F	T
T	F	F	F	T
F	T	T	T	T
F	F	T	F	F

If a compound statement consists of n individual statements, then the truth table consists of 2^n rows

ex2

p: I own a handgun

q: I am a criminal

r: I am a police officer.

I own a handgun and I am neither a criminal or a police officer.

P	q	r	$q \vee r$	$\sim(q \vee r)$	$p \wedge \sim(q \vee r)$
T	T	T	T	F	F
T	T	F	T	F	F
T	F	T	T	F	F
T	F	F	F	T	T
F	T	T	T	F	F
F	T	F	T	F	F
F	F	T	T	F	F
F	F	F	F	T	F

ex: I walk up the stairs if I want to exercise or if the elevator is not working.

p: I walk up the stairs

q: I want to exercise

r: The elevator is working.

$$(q \vee \sim r) \rightarrow p$$

1	2	3	4	5	6
p	q	r	$\sim r$	$q \vee \sim r$	$(q \vee \sim r) \rightarrow p$
T	T	T	F	T	T
T	T	F	T	T	T
T	F	T	F	F	T
T	F	F	T	T	T
F	T	T	F	T	F
F	T	F	T	T	F
F	F	T	F	F	T
F	F	F	T	T	F

p30
 3-36
 multiples of 3
 3, 6, 9, 12, ..., 33, 36