

- . If you need more practice with Truth Tables, below are 9 more Truth Table Exercises.

Write a truth table for the logical statements in problems 1–9:

1. $P \vee (Q \Rightarrow R)$ 4. $\sim (P \vee Q) \vee (\sim P)$ 7. $(P \wedge \sim P) \Rightarrow Q$
 2. $(Q \vee R) \Leftrightarrow (R \wedge Q)$ 5. $(P \wedge \sim P) \vee Q$ 8. $P \vee (Q \wedge \sim R)$
 3. $\sim (P \Rightarrow Q)$ 6. $(P \wedge \sim P) \wedge Q$ 9. $\sim (\sim P \vee \sim Q)$

- . Come to my office and together we can work some of the even numbered exercises. Below are the solutions to the odd numbered exercises.

1. Write a truth table for $P \vee (Q \Rightarrow R)$ 3. Write a truth table for $\sim (P \Rightarrow Q)$

P	Q	R	$Q \Rightarrow R$	$P \vee (Q \Rightarrow R)$
T	T	T	T	T
T	T	F	F	T
T	F	T	T	T
T	F	F	T	T
F	T	T	T	T
F	T	F	F	F
F	F	T	T	T
F	F	F	T	T

P	Q	$P \Rightarrow Q$	$\sim (P \Rightarrow Q)$
T	T	T	F
T	F	F	T
F	T	T	F
F	F	T	F

5. Write a truth table for $(P \wedge \sim P) \vee Q$ 7. Write a truth table for $(P \wedge \sim P) \Rightarrow Q$

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

P	Q	$(P \wedge \sim P)$	$(P \wedge \sim P) \Rightarrow Q$
T	T	F	T
T	F	F	T
F	T	F	T
F	F	F	T

9. Write a truth table for $\sim (\sim P \vee \sim Q)$.

P	Q	$\sim P$	$\sim Q$	$\sim P \vee \sim Q$	$\sim (\sim P \vee \sim Q)$
T	T	F	F	F	T
T	F	F	T	T	F
F	T	T	F	T	F
F	F	T	T	T	F