Fall 2017 COT 3100 Section 1 Quiz #1
Note: DID NOT COUNT DUE TO IRMA

Name: _____

Lab Section: 18 19 20 21 22 23 24

1) (4 pts) Complete the truth table below to evaluate the Boolean expression $(\overline{p \vee q}) \vee r$.

p	q	r	$p \vee q$	$\overline{p \vee q}$	$(\overline{p \vee q}) \vee r$
F	F	F			
F	F	T			
F	T	F			
F	T	T			
T	F	F			
T	F	T			
T	T	F			
T	T	T			

2) (8 pts) Show that the two following Boolean expressions are logically equivalent using the Laws of Logic. In order to earn full credit, you must use the format shown in class and not skip steps.

(a) $[p \vee (q \wedge r) \vee (q \wedge \bar{r})] \wedge [q \vee (r \wedge \bar{r})]$ (b) q

3) (8 pts) Using the following given propositions and the rules of inference, prove the conclusion below the dotted line. Note: You may not use all the slots given to you below.

$$p \rightarrow q$$
$$r \rightarrow s$$
$$\bar{q} \vee \bar{s}$$
$$\bar{p} \rightarrow t$$

$$\bar{r} \vee t$$

Number	Deduction	Rule + Previous Steps Utilized
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

4) (5 pts) Prove, using any method, the following statement: if *n* is an integer, then (3n+1)(5n+4) is an even integer.