

You MUST use good notation
and show appropriate work.

Math 102 (Section 2.4)

Name _____

2.4 Conditional and Biconditional

1. Complete the following truth tables. Circle your final answers.

(a)	p	q	$p \rightarrow q$	$\sim q \rightarrow \sim p$	$\sim p \vee q$	$p \wedge (\sim q)$	$\sim (p \leftrightarrow q)$
	T	T					
	T	F					
	F	T					
	F	F					

(b)	p	q	r	$(p \rightarrow q) \rightarrow r$	$(p \rightarrow q) \leftrightarrow \sim r$
	T	T	T		
	T	T	F		
	T	F	T		
	T	F	F		
	F	T	T		
	F	T	F		
	F	F	T		
	F	F	F		

2. Use truth tables to argue that $p \rightarrow (q \wedge r)$ is logically equivalent to $(p \rightarrow q) \wedge (p \rightarrow r)$.

p	q	r	$p \rightarrow (q \wedge r)$	$(p \rightarrow q) \wedge (p \rightarrow r)$
T	T	T		
T	T	F		
T	F	T		
T	F	F		
F	T	T		
F	T	F		
F	F	T		
F	F	F		