

Name: _____ Date: _____

Quiz 2

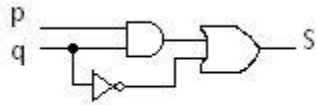
1) Negate the statement “Helen’s average is less than 90 or Helen is not getting an A.”

2) Verify the logical equivalence $p \wedge q \rightarrow r \equiv \neg p \vee (q \rightarrow r)$ by completing this truth table

p	q	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			

3) Verify the logical equivalence $p \wedge q \rightarrow r \equiv \neg p \vee (q \rightarrow r)$ by using Theorem 1.1, 1.2 and the alternate representation of the conditional $p \rightarrow q \equiv \neg p \vee q$.

- 4) A) Trace the pictured circuit to determine an expression for the output in terms of the input.
 B) Make an input-output table.
 C) Could the same input-output table be accomplished by a circuit using fewer basic gates? Example.



S =

p	q	S
0	0	
0	1	
1	0	
1	1	

Less gates if possible: S =