

Quiz 2: Section 1.2

1. (4 points) Fill in the reasons in the following proof sequence. Make sure you indicate which step(s) each derivation rule refers to.

Statements	Reasons
1. $(p \wedge q) \rightarrow r$	given
2. $\neg(p \wedge q) \vee r$	
3. $(\neg p \vee \neg q) \vee r$	
4. $\neg p \vee (\neg q \vee r)$	
5. $p \rightarrow (\neg q \vee r)$	

2. (2 points) Is the above proof *reversible*? In other words, can we take $p \rightarrow (\neg q \wedge r)$ as given and show that $(p \vee q) \rightarrow r$ must be true? Explain.

3. (4 points) Let x and y be integers. Given the statement

" $x > y$ or x is odd"

what statement follows by the implication rule?

Name: