# Quiz 2 (8 points total) Math 017, Spring 2016

Name: Section:

**Problem 1** Find the negation of $\sim p \wedge (p \vee \sim r)$.

1. $p \wedge (\sim p \vee r)$
2. $p \wedge (\sim p \wedge \sim r)$
3. $p \vee (\sim p \wedge r)$
4. $p \vee (p \wedge \sim r)$

**Problem 2** $p$ and $r$ are true, and $q$ and $s$ are false. Which one of the following is a true statement?

(a) $(r \to s) \to (p \to \sim q)$

(b) $(p \to r) \to (p \to q)$

(c) $(\sim r \to s) \to (\sim q \to s)$

(d) $(r \to \sim s) \to \sim (p \to \sim q)$

**Problem 3** Which of the following is equivalent to $\sim p \to q$?

(a) $p \wedge q$

(b) $\sim q \to p$

(c) $p \to \sim q$

(d) $q \to p$

**Problem 4** Which of the following is logically equivalent to the negation of $\sim (p \wedge q) \rightarrow r$?

(a) $(p \vee q) \vee r$

(b) $(p \wedge q) \vee r$

(c) $(\sim p \vee \sim q) \vee \sim r$

(d) $(\sim p \wedge \sim q) \wedge \sim r$

**Feedback:**

1. Any comments (on lectures, homework, quizzes, course, me, etc.)?