1. IDENTIFY THE MAIN CONNECTIVE AND MAKE A TRUTH TABLE.

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

(b) $\sim [(q \to p) \vee (p \to q)]$

2. PROVE THE FOLLOWING STATEMENT IS A FALLACY BY

(a) TRUTH TABLE

(b) QUICK METHOD

$$[(p \to q) \wedge (q \to r)] \wedge (p \wedge \sim r)$$

3. ARE THE FOLLOWING STATEMENTS TRUE OR FALSE?

(a) IF $x < 0$, THEN $x^2 > 0$.

(b) IF $x^2 > 0$, THEN $x < 0$.

(c) x IS ODD $\Leftrightarrow 2x+1$ IS ODD.

4. USE EQUIVALENCE LAWS TO PROVE THE FOLLOWING.

$$(a \to b) \to c \equiv (\sim a \to c) \wedge (b \to c)$$