1. Use truth tables to determine whether

$$P \Rightarrow (Q \vee R)$$

and

$$(P \wedge \sim Q) \Rightarrow R$$

are equivalent.

2. For each of the following conditional sentences:

- identify the antecedent;
- identify the consequent;
- write the converse of the sentence;
- write the contrapositive of the sentence;

(a) R being a rectangle is necessary for R to be a square. (Assume R is a fixed quadrilateral.)

(b) $x > 5$ is sufficient for x to be positive. (Assume x is a fixed real number.)