

Negations and contrapositive

Negate the following statement, moving all negations (e.g. “not”) onto individual predicates/propositions. You may use shorthand to do intermediate work, but your final answer should be in English. Similarly, construct the contrapositive of each statement.

If my plant is dead, then I did not water it or I left it in the dark.

Simple Proof

Prove using direct proof or disprove using a concrete counterexample the following claims.

- (a) For any real numbers p and q , $(p + q)^2 = p^2 + q^2$.
- (b) For any real numbers w, x, y , and z , if $w < x$ and $y < z$ then $wy < xz$
- (c) For any integer k , if k is odd, then k^3 is odd.