January 24th

Laws of Logic and In class Assignment

Monday 31 January

For all x

p -> q

~(q&&~r)

~r -> ~p

(r || ~p)

* p -> q (premise)
* ~q || r (premise)
* q -> r (known L.E.)
* p -> r (chain rule 1 and 3)
* ~r -> ~p (contrapositive)

Direct Proof: If the integer is even, then n^2 is even.

Proof:

Suppose n is even. (Premise)

This there exists an integer k sucj that n = 2k. (Alternative Premise)

Then, n^2 = (2k)^2 = 4(k^2)

Since k is an integer, we know, 2k is also an integer.

February 3, 2022