Answer on Question #76362 – Math – Discrete Mathematics

Question

Write down the contrapositive of the statement "If 3n2 + 4 is even then n is even." Then prove the statement for all integers n.

Solution

Contrapositive of this statement is "If n is odd then $3n^2 + 4$ is odd."

Proof of the initial statement (proof of the contrapositive statement follows from it).

$3n^2 + 4 \vdots 2 \Rightarrow 3n^2 \vdots 2 \Rightarrow n \vdots 2, QED.$

Answer:

"If n is odd then $3n^2 + 4$ is odd."