

Mini-Homework 9

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Question 1

Claim: the sum of any two numbers is even.

Proof

Choose two even numbers n and m .

Since n is even, there must be an integer k such that $n = 2k$.

Since m is even, there must be an integer j such that $m = 2j$

Let $2N = k + j$

— $= 2(k + j)$

— $= 2k + 2j$

— $= n + m$

Therefore, $n + m$ must be even. \square