

Discrete Mathematics

Logic and Proof

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More Examples of Direct Proof

Even and Odd Numbers

A number n is called *even* iff $n = 2m$ for some integer m .

A number n is called *odd* iff $n = 2m + 1$ for some integer m .

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Example. 0 and 18 are even, and that -9 is odd.

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Example 1

Prove: If n is even then $n^2 + 3n$ is even.

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Example 2

Prove: If n is odd then so is n^2 .