Decide if the following statements are true or false. Prove those that are true and disprove those that are false.

1. If n is any integer $2n$ is even.
2. If n is an even integer then $3n$ is also even.
3. The sum of any two integers is even.
4. The sum of two even integers is even.
5. The sum of two odd integers is even.
6. If n is even, then $n+1$ and $n-1$ are odd.
7. If n is odd, then $n+1$ and $n-1$ are even.
8. If m is even and n is odd then $n+m$ and $n-m$ are odd.
9. The sum of three odd integers is odd.
10. The sum of three even integers is odd.
11. Any even integer can be written as the sum of two odd integers.
12. The square of an even integer is even.
13. The square of an odd integer is odd.
14. No integer is both even and odd.
15. If n is an integer such that $3n$ is even then n is even.
16. Every integer is either even or odd, but not both. Another way to say this is that an integer n is even if and only if it is not odd.