## Problem 18.

Prove if true and disprove if false.

- **a.** Prove that for every integer a if  $a^3$  is even then a is even.
- **b.** Prove that  $\sqrt[3]{2}$  is irrational

Proof.

## Problem 23.

Prove that for any integer  $a, 9 \nmid (a^2 - 3)$ 

Proof.