

## EE2302 Foundations of Information Engineering

### Assignment 4

**Due: 11 pm, Sep 25 (Sat)**

Full mark: 9 points

1. (3 points) Prove or disprove that the product of any even integer and any integer is even.
2. (3 points) A prime number is an integer greater than 1 whose only factors are 1 and itself. Consider the following statement: If a number is prime, then the number is either odd or 2. Prove it by *contraposition*.
3. (3 points) Does the interval  $(0, 1)$  have the same cardinality as the interval  $(1, 100)$ ? Prove or disprove it.