

## Homework 2

1. Voice voting is the method of casting a vote in the 'open air' for everyone present to hear. Which of the following security requirements do paper ballots satisfy **better** than voice voting? Check all that apply and give a brief explanation for your decision.
  - Integrity
  - Enfranchisement
  - Ballot secrecy
  - Voter authentication
  - Availability
2. Explain how an attacker can use chain voting in order to influence the outcome of a poll using paper ballots.
3. Which of the following mechanisms help with defending against chain voting? Check all that apply. Give a brief reason for each defence that mitigates chain voting attacks.
  - Using a glass ballot box to make it clear there are no ballots in the box before the start of the election.
  - Distributing ballots publicly before the election.
  - Checking that a voter's ID (drivers license, passport) matches the voter.
  - Each ballot has a unique ID. When a voter is given a ballot, the ID is recorded. When the voter submits his or her ballot, this ID is checked against the record.
4. In the Estonian general election, votes can be cast via Internet some time before the election day. These votes cast via Internet can be changed an unlimited amount of times, the last vote is tabulated. You can even change your vote on the polling day in person. Which security requirement does this procedure address?
5. What is the main difference between online banking and e-voting? (Hint: Why is the latter so hard to get secure?)
6. Imagine, hypothetically, you have a perfectly secure Internet voting system, by which I mean nobody can tamper with or steal votes between your browser and the central server responsible for vote tallying. What can still go wrong with such a perfectly secure voting system, which is prevented in traditional elections with paper-based ballots?