

# Math 220 - Discrete Mathematics - Fall 2016

## Homework 13d

ATTENTION: The handout from class uses  $\vee$  instead of  $+$  and  $\wedge$  instead of  $\cdot$  in its definition of an abstract Boolean algebra.

### 1. HANDOUT PROBLEMS

Section 12.3 # 1, 2, 3, 5, 6, 8, 13, 15abc, 16abc

### 2. ADDITIONAL PROBLEMS

- (4) The US Senate has 100 members and a simple majority of the votes are needed to pass a bill. If there is a tie, the Vice President casts the tie breaking vote.

Assume a mock situation with a 4 member Senate. Draw up a circuit which models voting here. The inputs are 0 if a person votes against and 1 if a person votes for a bill. The output should be 0 if the bill fails and 1 if it passes. The Vice President's vote should only matter if there is a tie.