

Math 1015

Homework #3

1, 3, 4, 7

1

Imagine all voters rank X above Y.
Then X gets more points than Y,
so therefore Y cannot win using Borda.

3

Imagine X is the winner using Condorcet's method, and we change ballots to boost X.
Then X will do even better in their pairwise comparisons, therefore X is still the winner using Condorcet's method.

4

Imagine X is ranked 1st place on a majority of ballots. Then X automatically has the most 1st place rankings in any round, so X is never eliminated. Therefore X wins using RCV.

7a

Unanimity finishes with "then Y does not win"
instead of "then X wins"

7b

<u>3</u>	<u>2</u>
A	B
B	C
C	A

Here B is always ranked above C,
but A wins using plurality.