Math 1015: Homework #4

Question 1. Prove that dictatorship satisfies IIA.

Question 2. Please use this example election to show that Borda does not satisfy IIA:

4	3	3	2
A	B	C	D
B	A	D	E
C	C	A	C
D	D	B	A
E	E	E	B

(Show how somebody can change their vote in a certain way that has a certain effect.)

Question 3. Consider this election, using plurality:

2	4	3
A	B	D
C	A	A
B	D	C
D	C	B

a) Describe how the DACB voters can manipulate this election.

b) Explain why the ACBD voters cannot manipulate this election.

Question 4. Three of our concepts involve people changing their votes and having certain effects: monotonicity, IIA, and manipulability. Say a sentence or two about each one describing the difference between these 3 things.