1. Complete the Borda Method on the preference schedule below. Is there anything that bothers you about the winner? 12.160 81 ~

| points       |                             | 21            | 10          | 9                | <b>A</b> :                               | 3(21) + 2(0) + 1(04) = 82                                       | - Bwins. |
|--------------|-----------------------------|---------------|-------------|------------------|--|---|----------|
| 3            | 1st                         | A             | В           | В                | B:                                       | 3(19) + 2(21) + 1(0) = 79                                       | 20000    |
| 2            | 2nd                         | B             | С           | С                |  | -(2) + 2(10) + 1(21) = 59                                       |          |
| 1            | 3rd                         | C             | А           | А                | C:                                       | 3(0) + 2(14)(=)   |          |
| Prole<br>The | kem <sup>2</sup><br>Majorit | ? A<br>ny Cri | ha<br>levio | s a<br>: 1-<br>c | <u>majoritu</u><br>facandida<br>andidate | 1 of the votes.<br>ate wins a majority, then the<br>should win. |          |

2. (Ex 11) Below is a preference schedule (left) and one-to-one comparisons (right).

points tie • A vs B: 10 to 10 5 5 6 4 X A C B A: ½+1= 3/2 • A vs C: 14 to 6 A wins 1st B: 2+1= 32 A vs D: 5 to 15 D wins A C B X C B X A 2nd B vs C: 4 to 16 C wins  $\mathbf{C}:\mathbf{2}$ 4C wins 3rd B wins B vs D: 15 to 5 D: 1 B 🔀 A C 4th C wins C vs D: 11 to 9 What hoppens if D drops out? A losing candidate drops out and the result changes?!? points A : 2+1=3/2 - A wins B · 1/2 c:1Independence of Ivrelevant Alternatives Criteria (IIA) Says that if irrelevant (non-winning) candidates are added or

drop out, the winner shouldn't change

. X

3. Approval Voting

| 30 | 15           | 10                      | 10                               | $\mathcal{A}$  | APProv  |
|----|--------------|-------------------------|----------------------------------|--|---|
| Х  | Х            |                         |                                  |  | Disapport   |
| Х  |              | Х                       | Х                                |  |   |
|    | Х            |                         | Х                                | /  |   |
| -  | 30<br>X<br>X | 30 15   X X   X X   X X | 30 15 10   X X   X X   X X   X X | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ |

A: 30+15=45 B: 30+10+10=50 ~ Winner. C: 15+10=25

Vulnerable to Insincere Voting What if the 30 votes in Column 1 prefer A to B? By withholding approval for B, they can guarantee their preference. (Think scheduling software)