

ch 10 p. 74/1, 4

1) Original p.s.

3	2	3	
C	B	A	
B	A	C	
A	C	B	

Borda w/ ties decided alphabetically:

$$A: 3 + 4 + 9 = 16$$

$$B: 3 + 6 + 6 = 15$$

$$C: 2 + 6 + 9 = 17$$

$$W = \{C\}$$

$$\underline{48} = 8 \checkmark$$

w/ dishonest vote:

3	1	1	3	
C	B	A	A	
B	A	B	C	
A	C	C	B	

$$A: 3 + 2 + 12 = 17$$

$$B: 3 + 8 + 3 = 14$$

$$C: 2 + 6 + 9 = 17$$

$$W = \{A, C\}$$

$$\underline{48} \checkmark$$

dishonest voter actually prefers B over A over C, so since

A was added to the set of winners, the dishonest voter

likes the change -- so this was a strategic vote!

4) Proof of 10.3 with D the winner: Assume method is strategy proof.

1	1	1	1
A	B	C	D
B	C	D	A
C	D	A	B
D	A	B	C

Suppose $w = \{D\}$.

Alter ①, since method is strategy proof $C \notin W$ since dishonest voter would prefer C to D,

Alter ②, since method is strategy proof, $C \notin W$ since dishonest voter would prefer C to D.

Now p.s. look like $\frac{1 \ 1 \ 1 \ 1}{C \ C \ C \ D}$, so C has a

majority, but $C \notin W$. So method violates the majority criterion!