Exam 4 Review

Example

Ted and Riva must split 8 items between the two of them. They decided to use the adjusted winner procedure. How should these items be divided?

Step 1

Item	Ted	Riva
Movies	20	3
CDs	30	20
Couch	3	4
Toaster	10	16
TV	15	22
Printer	13	23
Chair	7	10
Rug	2	2

Step 2

Step 3

The initial winner is

The initial loser is

Step 4

Item	Point Ratio

Example

Aiden, Beverley, Charlie, and Danielle have inherited a house and a car to share equally. They each submit sealed bids for both items. Describe a fair division of these items using the Knaster Inheritance procedure (tell who gets each item and how much money each person gets or pays).

	House	Car
Step 1	Aiden bid $120,000 Beverley bid $140,000 Charlie bid $150,000 Danielle bid $115,000	Aiden bid $8,000 Beverley bid $7,000 Charlie bid $6,500 Danielle bid $8,500
Step 2	_____ gets the house and places _____ in a holding account.	_____ gets the car and places _____ in a holding account.
Holding Acct:		
Steps 3-4	Aiden Beverley Charlie Danielle	Aiden Beverley Charlie Danielle
Step 5	Aiden Beverley Charlie Danielle	

Example

Four people were bidding for tickets to concert. Owen bid $400, Madeline bid $350, Sofia bid $420, and Samuel bid $380.

(a) Who wins the tickets?

(b) How much does he/she pay for the tickets?

Example

People are bidding on a vacation package on eBay. The minimum bid was set at $500, and the bid increment is $8. Complete the following chart to show the progress of the auction before time ran out.

(a)

Bidder	Bid	Current Winner	Current eBay bid
Lily	$800	Lily	$500
Nora	$600		
Devin	$650		
Nora	$750		
Samuel	$850		
Lily	$1500		
Samuel	$950		

(b) Who won the auction?

(c) How much did he/she pay for the vacation package?

Example

A county has 11 representatives to apportion to the towns listed below.

(a) Apportion the representatives using the Hamilton method.

Town	Pop.	
A	1500	
B	2200	
C	1640	
D	50	

(b) Apportion the representatives using the Jefferson method.

Town	Pop.	q	
A	1500	3.061	
B	2200	4.490	
C	1640	3.347	
D	50	0.102	

$d =$

(c) Apportion the representatives using the Webster method.

Town	Pop.	q	
A	1500	3.061	
B	2200	4.490	
C	1640	3.347	
D	50	0.102	

$d =$

(d) Apportion the representatives using the Hill-Huntington method.

Town	Pop.	q	
A	1500	3.061	
B	2200	4.490	
C	1640	3.347	
D	50	0.102	

$d =$

The Jefferson method favors large states. The Hill-Huntington method favors small states.

Example

Label each situation with one of the following five choices:

A. The Alabama paradox occurred.
B. The population paradox occurred.
C. The new states paradox occurred.
D. The quota condition was violated.
E. The quota condition was NOT violated, and no paradox occurred.

(a) A new state was added (along with a proportionate number of representatives) and yielded the following apportionments using the Hamilton method.

State	Original Apportionment	New Apportionment
G	8	8
H	5	5
I	3	3
J		2

(b) The seats were apportioned using the Jefferson method.

State	quota	Jeff. App.
G	124.05	124
H	43.27	43
I	5.94	6

(c) A new state was added (along with a proportionate number of representatives) and yielded the following apportionments using the Hamilton method.

State	Original Apportionment	New Apportionment
G	8	7
H	5	6
I	3	3
J		2

(d) The house size changed from 8 to 9 and yielded the following apportionments using the Hamilton method.

State	House Size 8	House Size 9
G	5	4
H	3	4
I	0	1

(e) As the population changes, the representation is reapportioned using the Hamilton method.

State	Original Apportionment	New Apportionment	Absolute Pop Change	Relative Pop Change
G	14	14	1000	1.1%
H	13	14	1200	3%
I	16	15	1400	2%

(f) As the population changes, the representation is reapportioned using the Hamilton method.

State	Original Apportionment	New Apportionment	Absolute Pop Change	Relative Pop Change
G	14	14	1000	1.1%
H	13	14	1200	1.5%
I	16	15	1400	2%

(g) The seats were apportioned using the Jefferson method.

State	quota	Jeff. App.
G	124.95	126
H	43.27	43
I	5.34	5