Name: _____

1. Serena, Blair and Chuck are dividing five items using the method of sealed bids. Their bids on each of the items are given in the following table.

	Serena	Blair	Chuck
Item 1	\$14,000	\$12,000	\$20,000
Item 2	\$24,000	\$15,000	\$33,000
Item 3	\$16,000	\$18,000	\$14,000
Item 4	\$16,000	\$15,000	\$18,000
Item 5	\$17,000	\$24,000	\$20,000

(a) Find the value of each player's fair share.

Serena: _____

Blair: _____

(b) Describe which players get what items (and how much money they pay or receive) in the first settlement.

Serena:

Blair: _____

Chuck:

(c) Find the surplus after the first settlement is over.

(d) Describe which players get what items (and how much money they pay or receive) in the final settlement.

Serena:

Blair: _____

Chuck:

2. Sophia, Rose and Blanche jointly own a hotel. They can't get along anymore and decide to use the method of sealed bids, with the understanding that one of them will get the hotel and the other two will get cash. Sophia bids \$156,000, Rose bids \$150,000, and Blanche bids \$171,000. After the final settlement, how much money do Sophia and Rose get from Blanche for their one-third share of the hotel?

3. Three players (A, B, and C) are dividing the array of 13 items shown below using the method of markers. The players' bids are indicated in the figure.



(a) Which items go to A?

(c) Which items go to C?

- (b) Which items go to *B*? (d) Which items are left over?
- 4. Four players (A, B, C and D) are dividing the array of 15 items shown below using the method of markers. The players' bids are indicated in the figure.

(a) Which items go to
$$A$$
?
(b) Which items go to A ?
(c) $A_1 = A_1 = A_2 = A_1 = A_2 = A_2 = A_3 = A_3$

- (b) Which items go to *B*? (e) Which items are left over?
- (c) Which items go to C?

5. Theo, Vanessa and Rudy are dividing 3 Snickers bars, 3 Nestle Crunch bars and 3 bags of Skittles. The following table shows the amount of money each player is willing to pay for each type of candy.

	Snickers	Crunch	Skittles
Theo	\$1.00	\$1.00	\$1.00
Vanessa	\$0.00	\$2.00	\$0.00
Rudy	\$1.50	0.75	0.75

Assume the candy is arranged as below:



- (a) Find the dollar value of each player's fair share.(Remember that there are 3 Snickers bars, 3 Crunch bars, and 3 bags of Skittles.)
 - Theo: _____

Vanessa: _____

Rudy: _____

- (b) Place the markers for each player in the figure above. (Use T_1, T_2 for Theo, V_1, V_2 for Vanessa, and R_1, R_2 for Rudy.)
- (c) Describe the allocation of candy to each player and which candy is left over.

Theo: _____

Vanessa:

Rudy: _____

Surplus: _____

(d) Suppose that the players decide to divide the leftover pieces by a random lottery in which each player gets to choose one piece. Suppose that Vanessa gets to choose first, Rudy second, and Theo last. Describe the division of the left over pieces.

Theo: ______ Vanessa:

vanessa.

Rudy: _____