MA111-011 Mini-Exam 3   Name: _____ Practice _____

In each problem you will be graded on whether each named person is happy (receiving more than they are paying) and whether the money adds up (rent is covered, or side payments can actually be paid).

Emory and Charlie see an ad for a 2-bedroom apartment for $585.00 per month. The apartment has 2 bedrooms: the master bedroom and the other bedroom. Emory is willing to pay $350.00 per month for the master bedroom or $270.00 per month for the other bedroom. Charlie is willing to pay $325.00 per month for the master bedroom or $225.00 per month for the other bedroom.

	master	other
Emory	$350.00	$270.00
Charlie	$325.00	$225.00

1. Which room should each person get, and how much should they pay?

Emory, Charlie, Nikki, and Gayl see an ad for a 4-bedroom apartment for $1240 per month. The apartment has 4 bedrooms: the master bedroom, the long bedroom, the square bedroom, and the front bedroom. However the prospective roommates disagree on the values of the rooms. The maximum they are willing to pay for each room is in the table. Nobody is willing to share a room.

	master	long	square	front
Emory	$240	$120	$160	$300
Charlie	$260	$120	$240	$220
Nikki	$280	$320	$340	$400
Gayl	$320	$380	$320	$420

Typical Four-Bedroom Floor Plan

2. Which room should each person get, and how much should they pay?

Four BFF roommates (Emory, Charlie, Nikki, and Gayl) won a group costume contest; the set of vampire teeth was the prize. They agree that everyone owns the set of vampire teeth equally. However, they don't want to each take one tooth, and they don't want to take turns using the teeth. They want one person to own the teeth 100%, but that person should pay everybody else for their tooth.

The roommates disagree on the full values of the teeth, so they also disagree on the value of their own one quarter, and their roommmates three quarters. The values are in the following tables:

	Full Value	Their share	Else's share
Emory	$3.00	$0.75	$2.25
Charlie	$7.00	$1.75	$5.25
Nikki	$9.00	$2.25	$6.75
Gayl	$16.00	$4.00	$12.00
Average	$8.75		

3. Who should get the set of teeth and how much money should each person pay or receive?

The four BFF roommates (Emory, Charlie, Nikki, and Gayl) not only share the rent fairly, they also share boxes of breakfast cereal. While the friends believe each friend should get one quarter of the prizes, there are 3 prizes and 4 BFFs, creating a bit of a difficulty. The prizes are toys from Ice Age and are named Buck, Ellie, and Carl.

The roommates disagree on the full values of the toys, so they also disagree on the value of their own one quarter, and their roommmates three quarters. The values are in the following tables:

(Full)	Buck	Ellie	Carl	Total
Emory	$2.00	$3.20	$1.20	$6.40
Charlie	$4.40	$0.80	$2.40	$7.60
Nikki	$4.80	$3.60	$2.80	$11.20
Gayl	$0.40	$4.00	$1.60	$6.00
Average	$2.90	$2.90	$2.00	$7.80

(Own)	Buck	Ellie	Carl	Total
Emory	$0.50	$0.80	$0.30	$1.60
Charlie	$1.10	$0.20	$0.60	$1.90
Nikki	$1.20	$0.90	$0.70	$2.80
Gayl	$0.10	$1.00	$0.40	$1.50
Total	$2.90	$2.90	$2.00	$7.80

(Else's)	Buck	Ellie	Carl	Total
Emory	$1.50	$2.40	$0.90	$4.80
Charlie	$3.30	$0.60	$1.80	$5.70
Nikki	$3.60	$2.70	$2.10	$8.40
Gayl	$0.30	$3.00	$1.20	$4.50

4. Who should get each prize and how much money should each person pay or receive?