Math 104Q

Group Work on Linear Inequalities: Calculate your Income.

I. Income With Commission. This summer you plan to take a part time job as a salesperson with Cutcom, a company which specializes in selling fancy cutlery. As a salesperson you will earn $600 per month plus a commission of 20% of sales. Find the minimum amount of sales you need to make in order to receive a total income of at least $1500 per month.

To find the solution follow the following steps:

1. UNDERSTAND the problem thoroughly.
Read: Read and reread the problem.

Trail and Error: Check if a few arbitrary values give you a solution. For example, check if $1000 is a solution, that is: Will an amount of $1000 sales a month give you the monthly income you desire. Pick your own additional amounts of sales to try. Reflect on your answers. You may organize your work in the following table:

Sales $	**Commission $**	**Total Income** $	**Is the sales amount a solution?**
1000			

Can you make a guess of what the solution is?

2. TRANSLATE the problem into an inequality.
Chose a variable to represent the unknown: Let x =

Write an expression using your variable x for the total monthly income:

Write an inequality for your problem:

3. SOLVE the inequality for x.

4. INTERPRET.
Check your solution:

Explain why your calculations check your solution.

State your answer:

II. Future Income. Although beginning salaries vary greatly according to your field of study, the equation $s = 1245t + 35{,}558$ can be used to approximate and to predict average beginning salaries for candidates with bachelor's degrees. The variable s is the starting salary, and t is the number of years after 1995.

a. Approximate when beginning salaries for candidates will be greater than $48,000.
To find the solution follow the 4 steps suggested in the previous problem: Understand, Translate, Solve, and Interpret.

b. Determine the year you plan to graduate from college.
Use this year to find the corresponding value of t and approximate your beginning salary.
To solve the equation (not inequality) necessary in order to answer this question follow the 4 steps suggested in the previous problem: Understand, Translate, Solve, and Interpret.

c. What is the first thing you want to buy with the money from your first salary after college?