In groups of 4, complete the following tasks.

***Task 1:***

Aurora has two competing car rental companies.

* + For a compact car, Aurora High’s Wrecks charges a daily rate of $30 plus 25¢ per km driven.
  + For the same size of car, G.W.William’s Motors simply charges 40¢ per km driven.

1. Write an equation for the fees charged by each car rental company. Define the variables (provide ‘let’ statements)

Let x represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let y represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Aurora High’s Wrecks: y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

G.W. William’s Motors: y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Sketch a graph to model the scenario

& label the equations.

1. Solve the linear system algebraically.
2. What does the point of intersection represent in this scenario?
3. What does the graph indicate about which company you should rent from?

***Task 2:***

Wylie’s Sporting Goods sells footballs and soccer balls. Mr. Peres bought 3 footballs and 4 soccer balls and spent $126. Mr. Bulut bought 5 footballs and 2 soccer balls and spent $140. How much do footballs and soccer balls cost?

1. Write an equation for Mr. Peres’ and Mr. Bulut’s purchases. Define the variables (provide ‘let’ statements)

Let f represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let s represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Peres: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mr. Bulut: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solve your system of equations above in order to determine how much the balls cost.

***Task 3:***

When Billy Bob rented a car for 4 days and drove 200 km, the charge was $136. When he rented the same car for 7 days and drove 600 km the charge was $288. What were the charge per day and the charge per km?

1. Write an equation for each of Billy Bob’s cases. Define the variables (provide ‘let’ statements)

Let d represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let k represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Case #1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Case #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solve your system of equations above in order to determine each charge.

***Task 4:***

James looks in his TV cabinet and finds some old Beta and VHS tapes. He has 17 tapes in all. He finds that he has 3 more Beta tapes than VHS tapes. How many of each type does he have?

1. Write an equation for each set of given information. Define the variables (provide ‘let’ statements)

Let b represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let v represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solve your system of equations above in order to determine how many of each he has.

***Task 5:***

The sum of two numbers is 7. Three times one of the numbers is 15 more than the other number. Find the numbers.

1. Write an equation for each set of given information. Define the variables (provide ‘let’ statements)

Let m represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let n represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solve your system of equations above in order to determine each number.

***Task 6:***

Rehman invests his summer earnings of $3050. He invests part of the money at 8%/year and the rest at 7.5%/year. After 1 year, these investments earn $242 in interest. How much did he invest at each rate?

Let e represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let s represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Task 7:***

One type of granola has 30% nuts, by mass. A second type of granola has 15% nuts. What mass of each type needs to be mixed to make 600 g of granola that will have 21% nuts?

Let x represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let y represent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Task 8:***

Ken has $3.80 in nickels and dimes. If there are 50 coins altogether, how many dimes are there?

***Task 9:***

Mariam canoed 2 km downstream to her friend’s cottage, and it took her one hour. The return (upstream) trip took 120 minutes. Find the paddling rate and the speed of the current.