

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Linear System Word Problems

To solve linear systems that involve word problems we must make sure we set up the question properly. To do this we follow these five steps;

1. **Create “let statements”** – choose a variable for each unknown and write a statement that describes what each variable represents (i.e. Let  $x$  represent...)
2. **Create equations**- using the information given in the question and the variables chosen we must create two equations that describe the situation
3. **Solve** – use the 5 steps for the substitution method, or the elimination method, to solve the linear system of equations.
4. **Check your answer** – sub your answers for your variables back into your equations to see if the  $LS = RS$
5. **Write a concluding statement** – your statement should include the values and units for your variables.

### Examples:

1. Wendy’s restaurant was offering two different meal deals during an Ajax High Dance. A hamburger, poutine and drink cost \$8 and a Veggie meal costs \$9. 105 people have made reservations and ordered their meals in advance. The total cost to prepare the meals \$860. How many of each type of meal does the restaurant prepare?

2. A principal of \$5000 is invested. Part of the \$5000 is invested at 9% per year and the rest at 11% per year. After 1 year the total interest earned is \$520. How much money is invested at each rate?

## **Practice!**

1. Create "Let" statements and equations for the following: Pg. 27: #9, 12, Pg. 55: #8, 15. **DO NOT SOLVE.**

2. A golf club charges an annual fee and green fee for each round of golf. One year, one member played 12 rounds and paid \$814. Another member played 29 rounds of golf and paid \$1188. Determine the annual fee and the green fees.

3. Peter collected \$3.25 in dimes and quarters on his paper route. The number of dimes is one more than twice the number of quarters. How many of each kind of coins are there?

4. Pam has found two cellular phone plans for her father to consider:

- Phone-on-the-go charges \$15.00 per month and \$0.25 for each minute
- Flat Rate charges \$30 per month, no matter how many minutes are used.

Which of these two plans is the better deal? Make your recommendation about the two phone plans.

5. Jerome has suspended a paper plate from a spring, and as he places more and more loonies on the plate, he measures the distance from the plate to the floor. He finds that the plate begins 120 cm from the floor, and moves 2 cm closer to the floor with every loonie he puts in the plate. Alice is conducting the same experiment, but with a different type of spring and she finds that her plate starts off 204 cm from the floor and moves 5 cm closer with every loonie. Determine when the two plates are the same distance from the floor, assuming the springs will stretch that far.