

Systems of Equations Word Problems Project

Option A: A 4 by 4 system

Your Task:

1. Define your variables (say what your variables stand for)
2. Write a system of equations to model the word problem below.
3. Solve your system of equations.
 - a. Clearly identify the method you used
 - b. Clearly show each step for your method.
4. Clearly write the solution to your system
5. FINAL PRODUCT IS DUE NO LATER THAN **Friday, November 13.**

How you will present it:

Your final problem should be turned in on a clean piece of paper. With the problem written out, the variables defined, the system clearly written. Show how you solved your system. Show each step neatly. Show your solution checked. Clearly mark/label your solution.

Hint: Double and triple-check your work to make sure you didn't make any mistakes. Explain what your solution means using sentences and in terms of the context of the problem. Do all your work on a scratch piece of paper first and then neatly copy the work into your book.

The Candy problem:

Daniel bought 1 pound of jelly beans and 2 pounds of chocolates for \$2.00. A week later, he bought 4 pounds of caramels and 1 pound of jelly beans, paying \$3.00. The next week, he bought 3 pounds of licorice, 1 pound of jelly beans, and 1 pound of caramels for \$1.50. How much would he have to pay on his next trip to the candy store if he bought 1 pound of each of the four kinds of candy? How much does a pound of each type of candy cost?

Option B: A 3 by 3 system booklet

Your Task:

1. Pick one word problem from the 4 problems below.
2. Write a system of equations to model your word problem.
3. Solve your system of equations.
 - a. Clearly identify the method you used
 - b. Clearly show each step for your method.
4. Analyze how to solve a system of equations ("The Big Picture") and come up with key facts to help other students. Write out your theory. Make sure it is well written. Give examples if needed.
5. FINAL PRODUCT IS DUE NO LATER THAN **Friday, November 13.**

How you will present it:

You will make a 4-page booklet. Your job is to do the following:

1. Make a cover with a creative title and illustrations/clip art that refer to your problem. On the cover include your name and period.
2. The first inside page will have the complete problem written out. You will define your variables (say what your variables stand for), write your equations, and put the solution to the system with its explanation on this page. (Hint: all answers are whole numbers.)
3. The second page will show how you solved your system. Show each step neatly. Show your solution checked. Clearly mark/label your solution.
Hint: Double and triple-check your work to make sure you didn't make any mistakes. Explain what your solution means using sentences and in terms of the context of the problem. Do all your work on a scratch piece of paper first and then neatly copy the work into your book.
4. The third inside page will be a list neatly written by you. In this list you will write at least FOUR KEY FACTS that an Advanced Algebra student must know if they are going to write, solve a check a system of equations.

Problems to choose from:

Problem B1 – The Coin Problem:

A cashier has 25 coins consisting of nickels, dimes and quarters. The total value of the coins is \$4.90. If the number of dimes is 1 less than twice the number of nickels, how many of each type of coin does she have?

Problem B2 – The Theater Problem:

A theater has tickets at \$6 for adults, \$3.50 for students and \$2.50 for children under 12 years old. A total of 278 tickets were sold for one showing with total revenue of \$1300. If the number of adult tickets sold was 10 less than twice the number of student tickets, how many of each type of ticket were sold for the showing?

Problem B3 – The triangle Problem:

The measure of the largest angle of a triangle is 10° more than the sum of the measures of the other two angles and 10° less than 3 times the measure of the smallest angle. Find the measures of the three angles.

Problem B4 – The Parking Lot Problem:

A parking lot has spaces reserved for motorcycles, cars, and vans. There are five more spaces reserved for vans than for motorcycles. There are three times as many car spaces as van and motorcycles spaces combined. If the parking lot has 180 total reserved spaces, how many of each type are there?

* * * * Your project can be written or typed * * * *