

Name _____

Period _____

Alg 2 Trig Ch 3 Applications II

Mrs. Jensen

Solve all of the following problems using matrices. You must use matrices to solve at least three of the problems. Write a system of equations for any problems requiring one. Show all matrices and determinants used for credit.

DO ALL WORK ON SEPARATE PAPER.

- 1) Last Monday at 7:30am, an airline flew 89 passengers on a commuter flight from Boston to New York. Some of the passengers paid \$120 for their tickets and the rest paid \$230 for their tickets. The total cost of all the tickets was \$14200. How many passengers bought each type of ticket?
- 2) Next week, your math teacher is giving a 100 point chapter test. The test will consist of 35 problems. Some problems are worth 2 points and some problems are worth 4 points. How many of each value are on the test?
- 3) A Dairy Factory makes cheese and ice cream. A unit of cheese costs \$0.25 in ingredients and \$1.50 in labor. A unit of ice cream costs \$2.00 in ingredients and \$1.25 for labor. If the factory plans on spending \$163.75 for ingredients and \$273.00 for labor, how many units of cheese and ice cream is the factory able to make?
- 4) The arcade uses 3 different colored tokens for their game machines. For \$20 you can purchase any of the following mixtures of tokens: 14 gold, 20 silver and 24 bronze; OR 20 gold, 15 silver, and 19 bronze; OR 30 gold, 5 silver and 13 bronze. What is the monetary value of each token?
- 5) Walter has three investments totaling \$100,000. These investments earn interest at 8%, 10%, and 12% respectively. Walter's total income from these investments is \$10,600. The income from the 12% investment exceeds the total income from the other two investments (combined) by \$1200. Find how much Walter has invested at each rate.
- 6) A mom buys three different types of t-shirts for her children: long sleeve, polo, and short sleeve. The long sleeve shirts cost \$18 each, the polo's \$15 each, and the short sleeve shirts costs \$12 each. The mother purchased three less polo's than she did short sleeve. If the mother purchased 18 shirts at an average of \$14 each, find the number of each type of shirt purchased.