Algebra 2: Palka/Peto
Lesson 3-5(b) Writing and Solving Systems of Equations

Name _____
Date _____Period _____

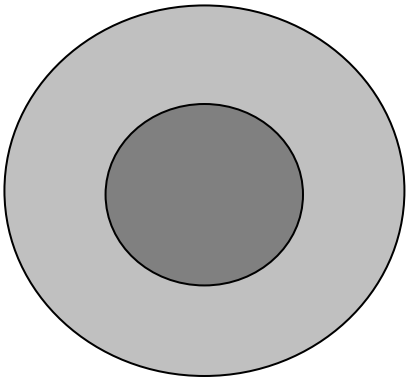
OBJECTIVE: To write and solve a system of equations.

Read each situation. Define variables, write and solve a system of equations to answer the question asked. Show all work.

1. Campus Rentals rents 2- and 3-bedroom apartments for $700 and $900 per month, respectively. Last month they had 6 vacant apartments and reported $4600 in lost rent. How many 2 bedroom apartments were vacant?

2. A sports equipment store is having a sale on soccer balls. A soccer coach purchases 10 soccer balls and 2 soccer ball bags for $155. Another soccer coach purchases 12 soccer balls and 3 soccer bags for $189. Find the cost of a soccer ball and the cost of a soccer bag.

3. Mark and Stephanie are playing a game where they toss a dart at a game board that is hanging on the wall. The points earned from a toss depends on where the dart lands. The center area is worth more points than the surrounding area. Each player tosses 12 darts.



a. Stephanie earned a total of 66 points with 6 darts landing in each area. Mark earned a total of 56 points with 4 darts landing in the center area and 8 darts landing in the surrounding area. Write and solve a system of equations that represents the number of darts each player tossed into each section. Define the variables.

b. How many points is the inner circle worth?

c. How many points is the outer circle worth?

d. If a player gets 10 darts in the inner circle and 2 in the outer circle, the total score is doubled. How many points would the player earn if he or she gets exactly 10 darts in the center?

4. Andy was putting together alien toys called Zergs and Borgs for the display window in a toy store. He has a box of alien toy body parts that contains 45 heads and 55 feet. Each Zerg must have one head and three feet. Each Borg must have four heads and two feet. How many Zergs and how many Borgs can he make if he must use all the heads and feet in the box?

5. In order to practice at home, Ted purchased a basketball and a volleyball that cost a total of $67, not including tax. If the price of the basketball b is $4 more than twice the cost of the volleyball v, how much would one basketball cost?

JUMBLED ANSWERS

46	5	4	13	14.50
8	8	172	21	3