Name _____ Date _____
Mr. Schlansky Algebra II

Solving Linear Systems in Three Variables

1. Solve the following system of equations algebraically for all values of x, y, and z:

$$x + 3y + 5z = 45$$

$$6x - 3y + 2z = -10$$

$$-2x + 3y + 8z = 72$$

2. Solve the following system of equations algebraically for all values of x, y, and z:

$$x + 2y - 3z = -2$$

$$2x - 2y + z = 7$$

$$x + y + 2z = -4$$

3. Solve the following system of equations algebraically for all values of x, y, and z:

$$-x + y + 2z = 7$$
$$2x + 3y + z = 1$$
$$-3x - 4y + z = 4$$

4. Solve the following system of equations algebraically for all values of x, y, and z:

$$2x - y + z = 7$$
$$x + 2y - 5z = -1$$
$$x - y = 6$$

5. Solve the following system of equations algebraically for all values of x, y, and z:

$$-2x + y + 3z = 20$$

$$-3x + 2y + z = 21$$

$$3x - 2y + 3z = -9$$

6. Solve the following system of equations algebraically for all values of x, y, and z:

$$2x + 3y + z = 5$$

$$x - 2y - 2z = -4$$

$$-3x - y + 3z = -7$$

7. In 2001, Randy Johnson of the Arizona Diamondbacks won Major League Baseball's Cy Young Award as the best pitcher in the National League. The winner is the pitcher who receives the most points, and a different number of points are given for each first, second, and third place vote. The table shows the votes for the top three finishers. Find the number of points awarded for each vote.

Player	1st Place	2nd Place	3rd Place	Total Points
Randy Johnson	30	2	0	156
Curt Schilling	2	29	1	98
Matt Morris	0	1	28	31

8. Mabel's Mini-Golf has different prices for seniors, adults, and children. The table shows the total revenue for three hours on a particular night. How much does each type of ticket cost?

Mabel's Mini Golf Prices				
Time	Senior	Adult	Child	Revenue
6:00 PM – 7:00 PM	5	10	12	$310
7:00 PM – 8:00 PM	5	5	4	$155
8:00 PM – 9:00 PM	4	2	3	$92