Unit 5 Lessons 1-2 Additional Problems Homework Set

1. Several years ago Ms. Allen invested in growth stocks, which she hoped would increase in value over time. She bought 100 shares of stock A, 200 shares of stock B, and 150 shares of stock C. At the end of each year she records the value of each stock. The table below shows the price per share (in dollars) of stocks A, B, and C at the end of the years 1984, 1985, and 1986.

	1984	1985	1986
Stock A	68.00	72.00	75.00
Stock B	55.00	60.00	67.50
Stock C	82.50	84.00	87.00

Calculate the total value of Ms. Allen's stocks at the end of each year.

2. A virus hits campus. Nurse Nancy discovers that students are either sick, well, or carriers of the virus. She finds the following percentages of people in each category, depending on whether they are a junior or a senior.

The student population is distributed by class and sex as follows:

	Junior	Senior
Well	15%	25%
Sick	35%	40%
Carrier	50%	35%

	Males	Females
Junior	104	80
Senior	107	103

How many sick males are there? How many well females? How many female carriers?

3. The president of the Lucrative Bank is hoping for a 21% increase in checking accounts, a 35% increase in savings accounts, and a 52% increase in market accounts. The current statistics on the number of accounts at each branch are as follows:

	Checking	Savings	Market
Northgate	40039	10135	512
Downtown	15231	8751	105
South Square	25612	12187	97

What is the goal for each branch in each type of account? (HINT: multiply by a 3×2 matrix with certain nonzero entries on the diagonal and zero entries elsewhere.) What will be the total number of accounts at each branch?

4. Winners at a science fair are determined by a scoring system based on five items with different weights attached to each item. The items and associated weights are the summary of background research – weight 3; experimental procedure – weight 5; research paper – weight 6; project display – weight 8; and creativity of idea – weight 4. Each project is judged by grading each of the five items on a scale from 0 to 10, with 10 highest. The total score for a project is derived by adding the products of the corresponding weights and points for each item.

	Peter	Jane	Bryan	Kathy	Mary	Chris	John
Background research	9	8	10	7	8	9	10
Experimental procedure	10	9	9	10	10	9	10
Research paper	7	9	8	9	7	8	8
Project display	9	10	9	8	10	8	9
Creativity of idea	8	7	8	10	6	8	7

a. What is the maximum total score possible for a project?

b. Calculate the score for a student who earns 8 points on background research, 9 points on experimental procedure, 7 points on the research paper, 8 points on the project display, and 6 points on creativity.

c. The table shown below contains the points for the finalists in the biology division. Calculate the total scores to determine the first, second, and third place entries.