## MEMORIAL UNIVERSITY OF NEWFOUNDLAND DEPARTMENT OF MATHEMATICS AND STATISTICS

ASSIGNMENT 1 MATH 2050 Sec. 3 DUE: SEPT 14, 2007

- 1. Find all solutions for the following systems of linear equations by writing the solution in parametric form. How many parameters are in the solution?
  - (a)  $\begin{cases} x + y z = 2 \\ x y = 0 \end{cases}$  (c)  $\begin{cases} x + 2y 3z + u = 4 \\ x + z = 0 \end{cases}$ <br/>(b)  $\begin{cases} x + 2y 3z = 4 \\ x 2y = 1 \end{cases}$  (d) x + y + z + u + v + 10 = 0.
- 2. Solve each of the systems algebraically and geometrically (or argue that it does not have a solution). Write the augmented matrix corresponding to each of the systems.

(a)	$\begin{cases} x + 2y = 1 \\ x + 1 = 0 \\ y - 1 = 0 \end{cases}$	(c)	$\begin{cases} x+2y=1\\ x-1=0\\ y+1=0 \end{cases}$
(b)	$\begin{cases} x+2y=3\\ 10y+5x=30 \end{cases}$	(d)	$\begin{cases} x + 2y = 1\\ x - 2y = 1 \end{cases}$

3. Write a linear system corresponding to the given augmented matrix.

6	2	-3	4	1	0
5	0	0	1	200	2

- 4. Give an example of a system of three linear equations in two variables that has infinitely many solutions.
- 5. In order to cook a *party-style* pizza Margo needs 10 mushrooms and 3 large tomatoes. For a *casual-style* pizza she needs 5 mushrooms and 2 large tomatoes. Given that 200 mushrooms and 70 large tomatoes were consumed in a cooking, find how many pizzas of each style were cooked by Margo.
- 6. Compose your own word problem that requires solution of a system of linear equations. Solve the problem.