Quiz 2 (10 pts)
Math 220, Spring 2008
Due Tuesday, February 19.

NAME:
STUDENT ID NUMBER:

SHOW YOUR WORK!

Problem 1. (5pts) a) Describe all solutions of $A\mathbf{x} = \mathbf{0}$ in parametric form, where $A$ is following matrix:

$$A = \begin{bmatrix} 1 & 3 & -3 & 7 \\ 2 & 6 & -10 & 19 \end{bmatrix}$$

b) How geometrically the set of solutions looks like? Possible answers are: a point, a line, a plane, a 3d space.
Problem 2. (5pts) a) Is $\vec{u}$ in the plane $\mathbb{R}^2$ spanned by the columns of $A$? Explain why or why not. If you only write yes or no without a solution you will get 0 points.

$$\vec{u} = \begin{bmatrix} 0 \\ 4 \\ 4 \end{bmatrix}, \quad A = \begin{pmatrix} 3 & -5 \\ -2 & 6 \\ 1 & 1 \end{pmatrix}$$

b) Find what condition coordinates $b_1, b_2$ and $b_3$ must satisfy so the vector $[b_1, b_2, b_3]$ was in the span of the columns of the matrix $A$ from the part a).