

ING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICAL SCIENCES
MATH 260-04
Quiz # 3
November 16, 2006

NAME:

ID#:

SHOW ALL YOUR WORK

1. **(4point)** Express the vector $\mathbf{t} = (12, 1, 9)$ as a linear combination of the vectors $\mathbf{u} = (1, -2, 2)$ and $\mathbf{v} = (3, -1, 3)$

2. Determine, with reason, whether or not the following subsets are subspaces of their respective spaces:

(a) **(3point)** $W = \{(x_1, x_2, x_3) \in \mathbb{R}^3 : 2x_1 + 3x_2 = 0\}$.

(b) **(3point)** $W = \{(x_1, x_2) \in \mathbb{R}^2 : |x_1| = x_2\}$.