MATH 4242 Quiz 1

Name:_____

Student Id:_____

Let $V = \mathbb{R}^2$ the real vector space, and define
$$U = \{(x,y)|y = x\}$$
$$W = \{(x,y)|y = -x\}$$
(1) Prove that both U and W are subspaces of V. (4 pts)

(2) Describe their sum $U + W$. Is it a direct sum? (6 pts)