Quiz No. 1

Section: Name: ID:

Problem 1.(3 points.)Let V be the set of +ve real numbers. If x and y denote positive real numbers then, we write vectors in V as $\underline{X} = x$ and $\underline{Y} = y$. The addition and scalar multiplication in V is defined by : $\underline{X} + \underline{Y} = xy$ and $k\underline{X} = x^k$

(1): Find identity of the set V under addition and

(2): Check if the axioms under "scalar multiplication" of the vector space are satisfied in V.

Problem 2(3 points) Check if set of vectors $S = \{(1, 2, 3), (0, 1, 2), (-2, 0, 1)\}$ in R^3 are linearly independent or linearly dependent?.

Problem 3(2 points)Do vectors in above question span R^3 ?

Problem 4(2 points) Is W=$\{(x, y), x \geq 0, y \geq 0\}$ with standard operations is a subspace of R^2?.