MATH 260, Homework 7, Spring '14
Due: March 21, 2014
Honor Code: **Name:**

1) (24 pts) Decide whether or not the given set constitutes a vector space (*i.e.*a subspace). If it's not a subspace, identify at least one requirement that is not satisfied and demonstrate it with an example of it failing. Assume "standard" definitions of the operations.

a) $S_1 = \{(x, y)|y = 2\}$

b) $S_2 = \{(x, y, z)|x + y = 0\}$

c) $S_3 = \{(x, y, z)|x + z = 3\}$

d) $S_4 = \{(x, y)|x^2 + y^2 = 1\}$

e) The set of all points in the 1st quadrant of the Cartesian plane.

f) The set of all polynomials of degree exactly equal to 2.

g) The set of all invertible 2×2 matrices.

h) The set of all upper triangular 2×2 matrices.