In The Name of God, The Compassionate, The Merciful

Name: .....

Student ID#: .....

Statistical Pattern Recognition (CE-725)
Department of Computer Engineering
Quiz #5 - Spring 2010

a. (6 points) Consider a 2-D pairwise linearly separable problem with the following discriminate functions:

$$g_{12}(x) = -x_1 - x_2 + 5$$
$$g_{13}(x) = -x_1 + 3$$
$$g_{23}(x) = -x_1 + x_2$$

Draw the decision boundaries and label classified regions and any indeterminate regions.

b. (4 points) For a two Class discrimination problem where each class is a Gaussian, the resulting decision boundary can sometimes be expressed as a linear discriminant function. What conditions must be satisfied for this to be the case?