MAD 3104 DM1 **Quiz 3e** 27 Sep 1995 **Name:** _____

Show **ALL** work for credit; be neat; and use only **ONE** side of each page of paper.

1. For each part, decide whether the logic is valid or invalid and draw a Venn diagram to support your answer.

A. Lee is a man or Lee is a woman. Lee is a man. Therefore, Lee is not a woman.

B. $x + 2 = x$ or x is blue. x is not blue. Therefore, $x + 2 = x$.

2. Equivalent classes. For the given set A, the relation R is an equivalence relation, describe the the equivalence class $[p]$, for the given p.

A. A is the points in the plane, $(a, b)R(c, d) \iff a + b = c + d$, and $p = (3, 4)$.

B. $A = \{0, 1, 2, 3, 4, 5, 6\}$, $aRb \iff a = b$ or $a + b = 6$, and $p = 4$.

C. A is the points in the plane, $(a, b)R(c, d) \iff b = d$, and $p = (3, 4)$.