

Math 14
Fall Term 2003
Supplementary Problems due Oct. 17, 2003

1. The *adjacent row interchange rule* for determinants says that if we interchange two adjacent rows of a matrix, then we multiply its determinant by -1 . The row interchange rule for determinants says that if we interchange two rows of a matrix, then we multiply the determinant of the matrix by -1 . (The other three rules are the row multiple rule, the row sum rule, and the determinant of the identity rule.) Show that we may conclude that any function that satisfies the adjacent row interchange rule, the row multiple rule, the row sum rule and the determinant of the identity rule, also satisfies the row interchange rule. Explain why this means that we may define the determinant to be a function that satisfies the adjacent row interchange rule, the row multiple rule, the row sum rule, and the determinant of the identity rule. (This will be useful to us when we finally get a chance to prove that there is a determinant function.)