AME 538
Homework 24
Due: Monday, 11 November 2002, in class

1. Consider the steady, two-dimensional Euler equations (that is the Navier-Stokes equations in the limit of $\mu \to 0$, $k \to 0$) for a homeoentropic flow of a calorically perfect ideal gas. Using the method developed in class, write cast these partial differential equations as a set of ordinary differential equations which are valid along characteristics. What are the conditions for the characteristics to be real?