AE 457/641 – Navigation and Guidance
Tutorial 1, August 9, 2007

1. Find the constant course required to navigate along a rhumb line from New York (40°47′ N, 73°58′ W) to Cardiff (51°30′ N, 3°12′ W). Find the rhumb line distance as well as the shortest distance between these two ports. **V. Harsha** (04001014) + teammate.

2. If an intermediate waypoint is chosen to lie at longitude 38° W along the great circle track between New York and Cardiff (see the problem above), find the distance covered by sailing a rhumb line track first from New York to the intermediate point, and then from the intermediate point to Cardiff. **Sandeep Kusam** (04001019) + teammate.

3. A vessel sails at constant speed with a constant course. At time t_1, the relative bearing (measured from the heading direction of the vessel) to a landmark A is 9.14°, while the relative bearing to a landmark B on the opposite shore is 339.14°. At a later instant t_2, the relative bearings to landmarks A and B are 49.14° and 299.14°, respectively. If B lies 1km due north of A, and the vessel was due west of A at t_1, find the distance covered by the vessel in between the two sets of observations, and its true course. **Varun Parikh** (04D01001) + teammate.