

5B (old Spec) Hinges

1. A uniform rod AB, of mass 6kg and length 4m, is smoothly hinged at A. A light inextensible string is attached to the rod at a point C where $AC = 3\text{m}$, and the point D, which is vertically above point A. If the string is keeping the rod in equilibrium in a horizontal position and the angle between the string and the rod is 40° , calculate:
 - a) The tension in the string

b) The magnitude and direction of the reaction at the hinge.