**7D Ladders**

1. A uniform rod AB of mass 40kg and length 10m rests with the end A on rough horizontal ground. The rod rests against a smooth peg C where AC = 8m. The rod is in limiting equilibrium at an angle of 15° to the horizontal. Find:
2. The magnitude of the reaction at C
3. The coefficient of friction between the rod and the ground

1. A ladder, AB, of mass m and length 3a, has one end A resting on rough horizontal ground. The other end, B, rests against a smooth vertical wall. A load of mass 2m is fixed on the ladder at point C, where AC = a. The ladder is modelled as a uniform rod and the load is modelled as a particle. The ladder rests in limiting equilibrium at an angle of 60° with the ground.

Find the coefficient of friction between the ladder and the ground.