

10E Connected Particles

1. Two particles, P and Q, of masses 5kg and 3kg respectively, are connected by a light inextensible string. Particle P is pulled by a horizontal force of magnitude 40N along a rough horizontal plane. Particle P experiences a frictional force of 10N and particle Q experiences a frictional force of 6N.
 - a) Find the acceleration of the particles

b) Find the tension in the string

c) Explain how the modelling assumptions that the string is light and inextensible have been used