## Section 1: Friction

Exercise level 1
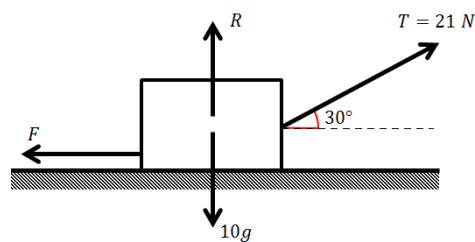
Take $g = 9.8$ m s^{-2} unless stated otherwise.

1. Each diagram below shows a block of mass 10 kg resting on a rough horizontal surface. The block is being pulled by an inextensible rope with tension T. Given that the block is on the point of sliding in each case, find
    (i)   The normal reaction of the surface on the block
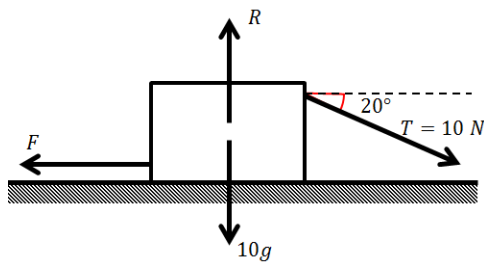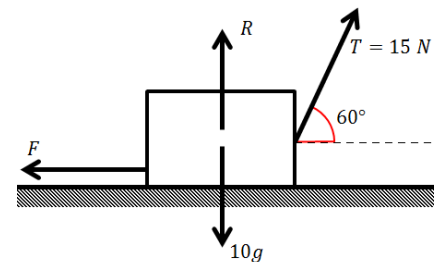   (ii) The coefficient of friction.

(a)
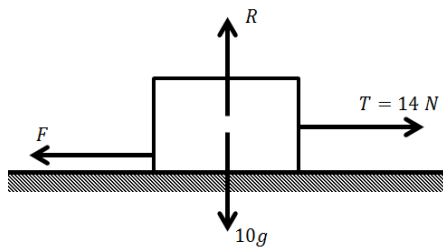
(b)

(c)

(d)

2. A block of weight 18 N rests in equilibrium on a rough horizontal plane under the action of a force of 9 N. Find the magnitude of the frictional force on the block given that the external force acts
    (i)   horizontally
    (ii) vertically downwards
    (iii) downwards at an angle of 60° to the horizontal.