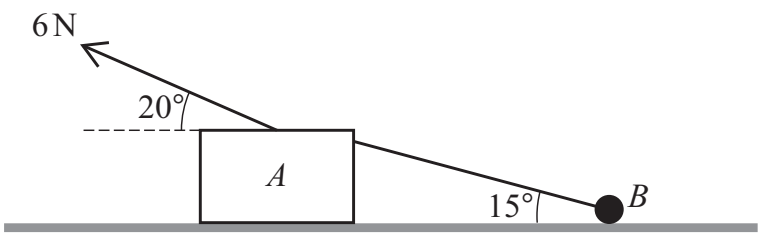
8



A block A of mass 2 kg and a particle B of mass 0.5 kg are connected by a light inextensible string inclined at 15° to the horizontal. They are pulled across a horizontal surface with acceleration $1.2\,\text{m s}^{-2}$ by a force of magnitude 6 N, applied to A, acting at 20° above the horizontal as shown in the diagram. The string and the force applied to A are in the same vertical plane.

The contact between B and the surface is smooth and the contact between A and the surface is rough.

(a) Find the tension in the string. [2]

(b) Find the coefficient of friction between A and the surface. [6]

Additional page

If you use the following page to complete the answer to any question, the question number must be clearly shown.