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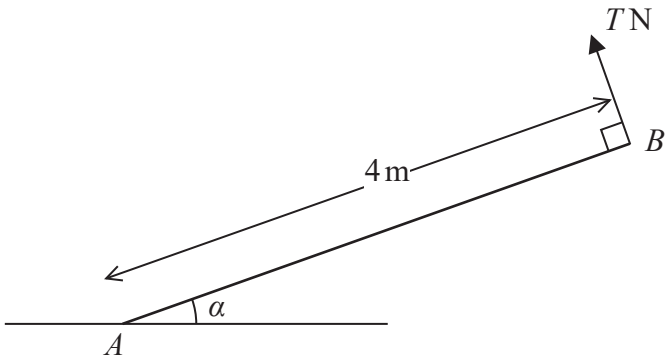


Figure 2

A uniform rod AB has length 4 m and weight 50 N.
The rod has its end A on rough horizontal ground. The rod is held in equilibrium at an angle α to the ground by a light inextensible cable attached to the rod at B, as shown in Figure 2. The cable and the rod lie in the same vertical plane and the cable is perpendicular to the rod. The tension in the cable is T newtons.

Given that $\sin\alpha = \frac{3}{5}$

(a) show that $T = 20$

(3)

Given also that the rod is in limiting equilibrium,

(b) find the value of the coefficient of friction between the rod and the ground.

(6)

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