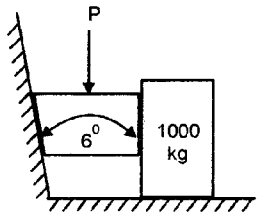
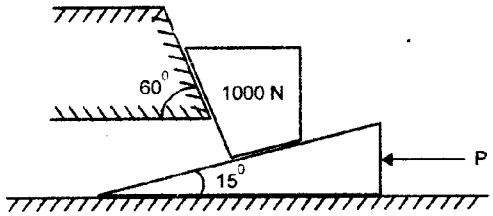
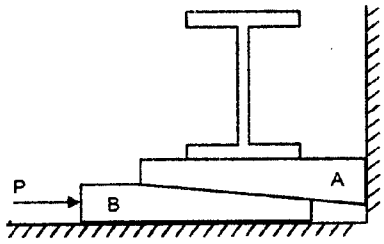
P1. The horizontal position of the 1000 kg block is adjusted by 6° wedge. If coefficient of friction for all surfaces is 0.6, determine the least value of force P required to move the block.



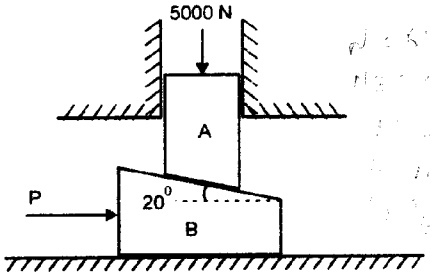
P2. A block weighing 1000 N is raised against a surface inclined at 60° to the horizontal by means of a 15° wedge as shown in figure. Find the horizontal force P which will just start the block to move if the coefficient of friction between all the surfaces of contact be 0.2. Assume the wedge to be of negligible weight.



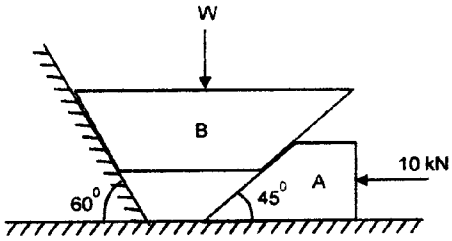
P3. The vertical position of the 200 kg mass I section is being adjusted by two 15° wedges as shown. Find force P to just raise the mass.
Take μ = 0.2 for all surfaces.



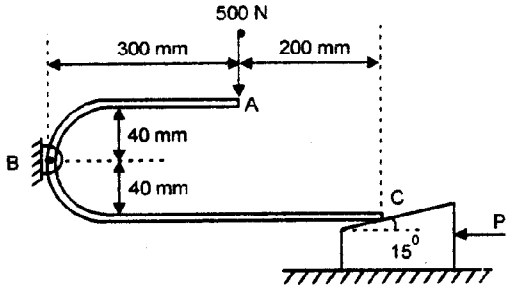
P4. Wedge A supports a load of W = 5000 N which is to be raised by forcing the wedge B under it. The angle of friction for all surfaces is 15°. Determine the necessary force P to initiate motion. Neglect the weight of the wedges.



P5. A horizontal force of 10 kN holds a system of two wedges in equilibrium. Find the maximum load W which the wedge B may support.
Take μ = 0.35 for all surfaces.



P6. A rigid U-pin bracket ABC is hinged at B. Its end C rests on a 15° wedge as shown. If the vertical load acting on the bracket at A is 500 N downwards, determine the minimum horizontal force P required to push the wedge to the left. Neglect the weight of wedge and bracket. Take μ for all surfaces of contact as 0.2.



ANSWERS

P1. 12439 N

P2. 594.9 N

P3. 1512 N

P4. 5959 N

P5. 118.6 kN

P6. 216.9 N