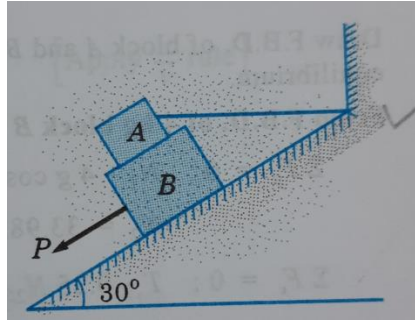# Class work problems on Module 4.3 – 2022

1. Block A of weight 300 N rests on a block B of weight 400 N. Block A is restrained from moving by a horizontal rope tied at point C. What force P applied parallel in the plane inclined at $30^0$ with the horizontal is necessary to start block B down the plane? Take coefficient of friction for all surfaces as 0.35.



2. Determine the force P to cause motion to impend. Take masses of A and B as 9 kg and 4 kg respectively and coefficient of friction as 0.25. The force P and rope are parallel to the inclined plane.
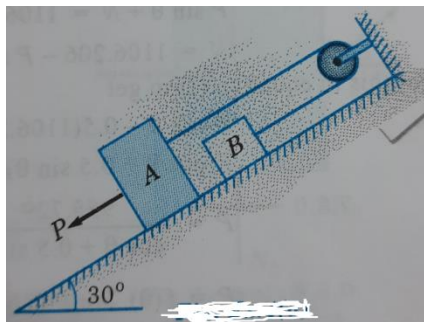


3. A non-homogeneous ladder shown in fig. rests against a smooth wall at B and a rough horizontal floor at A. The mass of the ladder is 30 kg and is concentrated at 2 m from the bottom. The coefficient of static friction between the ladder and the floor is 0.35. Will the ladder stand in position?
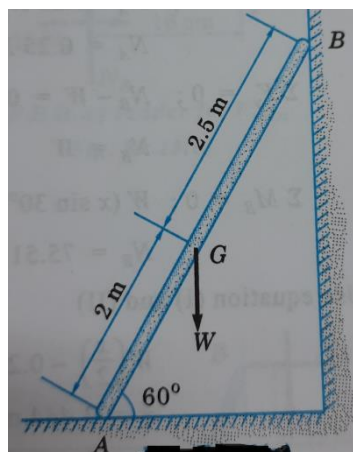
4. A 100 N uniform rod AB is held position as shown in fig. If coefficient of friction is 0.15 at A and B, calculate the range of values of P for which equilibrium is maintained.
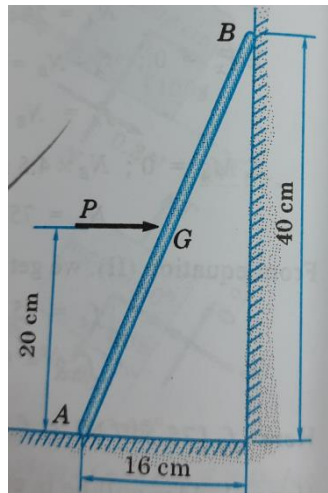


5. A block of mass 150 kg is raised by a wedge weighing 50 kg under it and by applying a horizontal force at it as shown in the fig. Taking coefficient of friction between all surfaces of contact as 0.3, find what minimum force should be applied to raise the block.
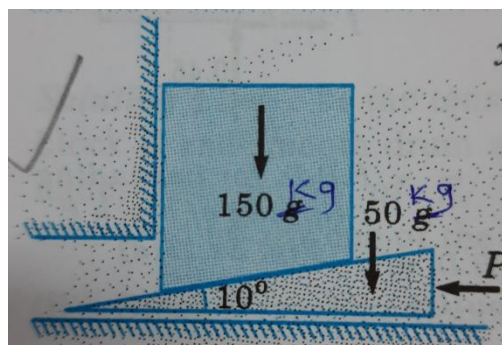


6. Assuming the values for $\mu$ = 0.25 at the floor and 0.3 at the wall and 0.2 between the blocks, find the minimum value of a horizontal force P applied to the lower block that will hold the system in equilibrium.