

VISHWAKARMA INSTITUTE OF TECHNOLOGY

Department of Engineering, Sciences and Humanities

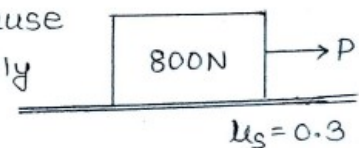
FY – 2022-2023 -SEM 1

ES1035: Robot Mechanics and Electronics

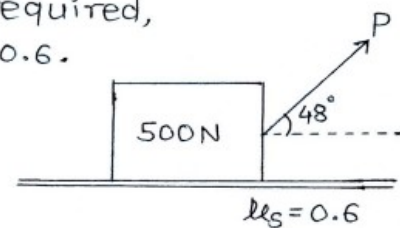
HOME ASSIGNMENT NO 2

Friction

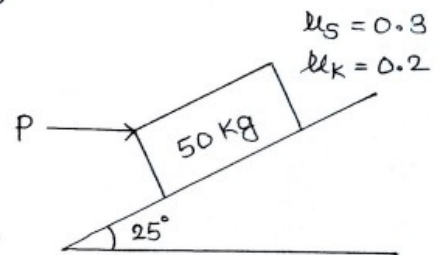
Q.1) 800 N block is resting on a rough horizontal surface as shown in the figure, for which the coefficient of friction is 0.3. Determine the force required to cause motion, if applied to the block horizontally. What is the minimum force required to start the motion.



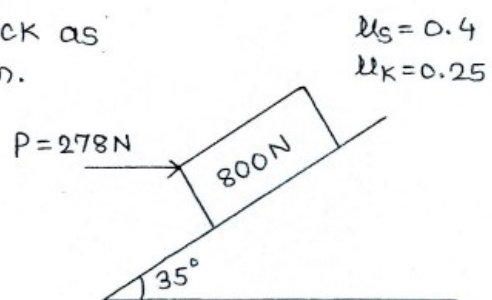
Q.2) A body of weight 500N is kept on a horizontal plane & a force 'P' is applied to move the body as shown in the figure. Find the magnitude of force required, if the coefficient of static friction is 0.6.



- Q.3) Determine the horizontal force 'P' needed to just start moving 50 kg block of the plane as shown in the figure.



- Q.4) Determine whether the given block as shown in the figure is in equilibrium. Find the magnitude & direction of the frictional force when the angle is 35° & $P = 278 \text{ N}$.



Important Note: Last date of assignment submission is 17th Jan 2023.