

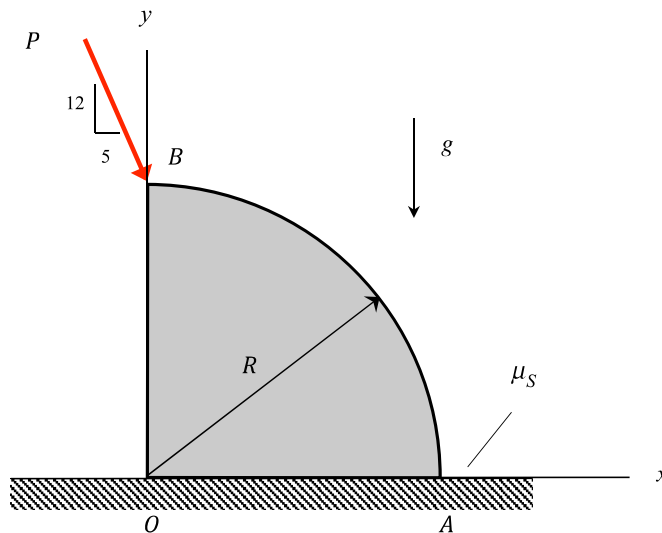
Homework H18.A

Given: A homogeneous quarter-circle block (with a radius of R and a weight of W) is supported by a rough, horizontal floor, as shown.. A force P is applied to the block at corner B.

Find: For this problem:

- Determine the x -location of the normal force acting on the block by the floor. Express your answer in terms of R .
- What is the minimum coefficient of static friction between the block and ground, μ_s , that is required to prevent motion of the block?
- Is the block in a state of impending slipping or tipping for the value of μ_s found in b) above? Explain.

For this problem, use: $P = W$.



Homework H18.B

Given: A homogeneous triangular block having a weight of W and its center of mass at G is supported by a slider on a rough horizontal guide at A and by smooth roller on a horizontal surface at C . The coefficient of static friction of μ_s exists between the slider and the guide at A .

Find:

- Determine the maximum force F that can be applied at B and not have the block move. Express your answer in terms of the weight W .
- For the force F found above, is the block in a state of impending tipping or impending slipping?

For this problem, use the following parameter value: $\mu_s = 0.50$.

