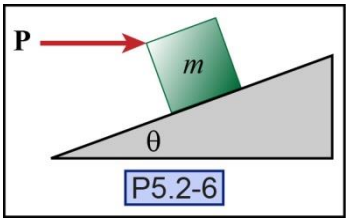
P5.2-6) A horizontal force P = 20 N pushes a 20-kg block up a 20°-degree incline. The kinetic coefficient of friction is 0.3. If the block starts at a speed of 10 m/s, up the incline, how far does the block move before it comes to a stop?



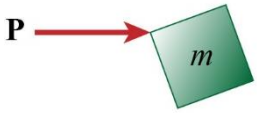
P5.2-6

Given:

Find:

Solution:

Draw a free-body diagram of the block.



Calculate the kinetic friction force.

F_{fk} = _____

Determine the acceleration of the block.

Write down the block's equation of motion.

a = _____

Use kinematics to determine the distanced traveled.

Δs = _____