

Name:

Period:

Inclined Planes with Friction

Show all work, including equations and substitution with units. $g = 9.81\text{m/s}^2$

1) A 20kg block is sliding across a horizontal surface. The block is being pushed with a 200N force at an angle of 20° from the horizontal. (Pushing down and right.) The coefficient of friction between the block and surface is 0.5.

a) What is the weight of the block?

b) What is the force of friction acting on the block?

c) What is the acceleration of the block?

2) A 20kg block is on an inclined plane with an angle of 40° from the horizontal. The block has an acceleration of 5m/s^2 down the incline. What is the coefficient of friction between the block and the incline?

3) A 125N block is being pulled up an incline of 35° . How hard is the pull if the block accelerates at 2.7m/s^2 ?