Name: Period:

Coefficient of Friction Worksheet

1. A hockey puck has a coefficient of kinetic friction of μk = .10. If the puck feels a normal force (FN) of 5 N, what is the frictional force that acts on the puck?
2. Suppose a 10 N force is applied to the side of a 4.0 kg block that is sitting on a table. The block experiences a frictional force against the force that is applied.
   1. Draw a force diagram for the block.
   2. What is the weight of the block (FG)?
   3. What is the normal force on the block (FN)?
   4. If the coefficient of kinetic friction is μk = .20, what is the frictional force on the block (Ff)?
   5. What is the net force on the block?
   6. What is the acceleration of the block from the net force?

Name: Period:

1. For the block in Problem 2, what would be the minimum value of the coefficient of static friction in order for the block to remain motionless?
2. A block weighing 300 N is moved at a *constant speed* over a horizontal surface by a force of 50 N applied parallel to the surface. What does the “constant speed” tell you about the forces acting on the block?
   1. Draw a force diagram for the block.
   2. What is the coefficient of kinetic friction (μk)?
   3. What is the mass of the block?
   4. What would be the acceleration of the block if μk = 0?
3. A 100 N force is applied to the side of a crate resting on a level floor. The crate has a mass of 50 kg. If the coefficient of static friction is μs = .25, is the 100 N force enough to make the crate accelerate? Explain why or why not. (As always, start with a force diagram)