## Finding forces in real life situations, a deeper look at friction.

1. A block weighing 300. N is moved *at constant speed* over a horizontal surface by a force of 50. N applied parallel to the surface.

a. Draw a force diagram to represent this situation

b. What is the coefficient of kinetic friction?

c. What would be the acceleration of the block if µk = 0?

2. A 100. N force is applied to a 50. kg crate resting on a level floor. The coefficient of kinetic friction is 0.15.

a. Draw a force diagram to represent this situation.

b. What is the acceleration of the crate?

3. In the situation described above, the coefficient of static friction, µs = 0.25. Is the

100. N force sufficient to cause the crate to accelerate? Draw a force diagram, and then explain why or why not.

4. A 10 kg block is allowed to slide down a ramp with µk = 0.15.

a. Draw a force diagram to represent this situation

b. What is the value of the frictional force opposing the block's slide down the ramp?

c. What is the acceleration of the block?