Name:

Date:

Final Review: Unbalanced Forces

1. A horizontally applied force of 20 N is used to pull a 5 kg box along a rough horizontal surface, as shown below. The box accelerates at 2.1 m/s2.

Fn = ­­\_?\_­

Ff = \_?\_

Fg = \_?\_

Fa= 20 N

1. Determine the weight (Fg) of the box. Fg=\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Determine the Normal force of the box. Fn= \_\_\_\_\_\_\_\_\_\_\_\_\_
3. Determine the net force of acing on the box in the horizontal direction. Fnet = \_\_\_\_\_\_\_\_
4. Calculate the value of the frictional force between the box and the floor. Ff=\_\_\_\_\_\_\_\_\_\_\_
5. Determine the coefficient of kinetic friction. µk= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_.If the frictional force in the above problem equaled 20 N;

1. the box would move with constant acceleration.
2. the box would come to rest.
3. the box would move with a constant velocity.

\_\_\_\_3. Mass and acceleration are ­­\_\_\_\_\_\_\_ related when force is held constant.

* 1. directly
  2. inversely
  3. not

\_\_\_\_4. On a snow day, you decide to take your truck and run over snowmen. The force with which you hit the snowman will be\_\_\_\_\_\_\_

* 1. greater than the force that the snowman applies to the truck
  2. equal to the force that the snowman applies to the truck
  3. less than the force that the snowman applies to the truck.

Matching.

1. Newton’s First Law
2. Newton’s Second Law
3. Newton’s Third Law

\_\_\_\_5. For every action there is an equal, but opposite reaction.

\_\_\_\_6. An object at rest will stay are rest unless acted on by an unbalanced force. An object in motion will stay in motion unless acted on by an unbalanced force.

\_\_\_\_7. Force is directly related to the product mass and acceleration.