Unit 5: Forces
**Force of Friction**

Friction is created whenever…

On the microscopic level…

Friction is given by the equation:

 Where:
 FN =
 =
 µ =
 =
 =

Static Friction:

Kinetic Friction:

**Frictionstatic Frictionkinetic**

**μ static μkinetic**

Ex 2: A 0.200 kg puck is pushed along a sheet of ice with a force of 0.240 N. If it moves at a constant velocity, find the coefficient of friction.

Ex 1: A 3.75 kg block is pushed along a tabletop with a force of 45.0N. The coefficient of friction is 0.65.

a) Find the force of friction.

b) Find the acceleration.

Ex 3: A 1.1 kg textbook is held against a vertical wall with a force of 45 N. What is the coefficient of friction between the book and the wall?

1) A 7.6 kg object is resting on a horizontal surface. What is the normal force on the object?

Worksheet 5.3 - Force of Friction

2) A 7.6 kg object is pulled along a horizontal surface. If the coefficient of friction is 0.20, what is the force of friction?

4) A 9.6 kg object is pulled along a horizontal surface. If the coefficient of friction is 0.11 what is the force of friction?

5) A 20.0 N object is pulled along a horizontal surface at a constant velocity by a 3.0 N force, what is the coefficient of friction?

6) A 16.2 kg object is pulled along a frictionless surface by an applied force of 10.2 N, what is the normal force acting on it?

7) A 6.2 kg object is pulled along a horizontal surface by a force of 22.0 N. If its acceleration is 1.1 m/s2, what is the coefficient of friction between the two surfaces?

1) 74 N 2) 15 N 3) 137 N 4) 10. N 5) 0.15 6) 159 N 7) 0.25 8) 0.40 9) 1200 N 10) 0.123

8) A 1250 kg car traveling at 60.0 km/h comes to a sudden stop in 35 m. What is the coefficient of friction acting on the brakes?

9) A 950 kg car traveling at a constant velocity of 28 m/s, has a coefficient of friction of 0.125 acting on its axle. How much force is required by the engine to maintain its speed?

10) A 1425 kg dragster exerts 13900 N of force and accelerates from 0 to 100.0 km/h in 3.25 s. What is the coefficient of friction acting on the car?