

Name: _____

Date: _____

WS 2.2: Static and Kinetic Friction Practice

Unit 2: Dynamics and Equilibrium

1. The brakes are applied to a 750 kg car traveling 30. m/s and the car skids to a stop. The coefficient of sliding friction between rubber tires and wet pavement is 0.50.
 - a. What is the size and direction of the force of friction that the road exerts on the car?

 - b. What would be the acceleration of the car?

 - c. How far does it travel before it comes to a stop?

2. What is the force of friction between the dragster's tires and the track if the dragster has a mass of 3.0×10^2 kg and the coefficient of friction between the tires and the asphalt is 0.80?

3. To slide a metal puck across a greased sheet of metal at constant speed requires a force of 0.525 N. If the force of gravity on the puck is 5.00 N, what is the coefficient of friction between the puck and the greased metal?

4. A car is travelling at 120 km/hr when it slams on the brakes. How long is the skid mark if the coefficient of friction is 0.62?

5. A tow-truck is trying to pull a 1.4×10^3 kg car out of some mud. The coefficient of static friction is 0.76. What force will the tow truck have to apply to the car before it will start to move?

6. A sled and its rider are moving at a speed of 4.0 m/s along a horizontal stretch of snow. The snow exerts a kinetic frictional force on the runners of the sled, so the sled slows down and eventually comes to a stop. The coefficient of kinetic friction is 0.050. What is the displacement d of the sled?