Friction

Read from **Lessons 2 and 3** of the **Newton's Laws** chapter at **The Physics Classroom**:

http://www.physicsclassroom.com/Class/newtlaws/u2l2b.html
http://www.physicsclassroom.com/Class/newtlaws/u2l3c.html
http://www.physicsclassroom.com/Class/newtlaws/u2l3d.html

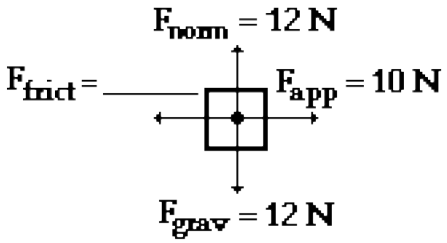
1. A classroom desk supported by long legs is stationary in the room. A teacher comes around and pushes upon the desk in an effort to start it into a state of motion. The desk does not *budge*. The desk remains at rest because _____.
   a. there is a force of static friction opposing its motion
   b. there is a force of kinetic or sliding friction opposing its motion
   c. there is a force of rolling friction opposing its motion
   d. there are small dust mites at the desk's feet which push back on the desk to keep it at rest

2. A classroom desk supported by long legs is stationary in the room. A teacher comes around and pushes upon the desk in an effort to start it into a state of motion. The desk is finally accelerated from rest and then moves at a constant speed of 0.5 m/s. The desk maintains this constant speed because _____.
   a. there is a force of static friction balancing the teacher's forward push
   b. there is a force of kinetic or sliding friction balancing the teacher's forward push
   c. there is a force of rolling friction balancing the teacher's forward push
   d. the teacher must have stopped pushing

3. The symbol μ stands for the _____
   a. coefficient of friction b. force of friction c. normal force

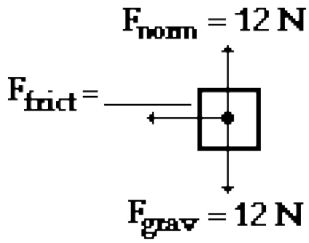
4. The units on μ are _____
   a. Newton b. kg c. m/s/s d. ... nonsense! There are no units on μ.

5. Use the friction equation and $F_{net} = m \bullet a$ to fill in the blanks in the following situations.



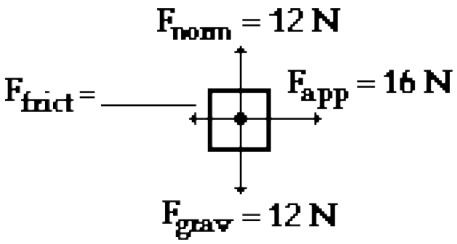
a = 0 m/s/s

μ = _____



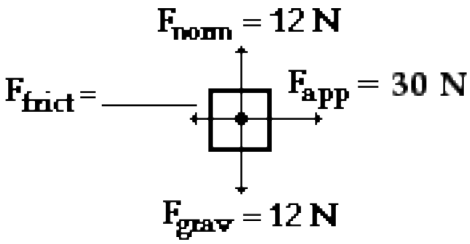
a = 5 m/s/s, left

μ = _____



a = 5 m/s/s, right

μ = _____



a = _____ m/s/s, _____

μ = 0.500

