

Work each of the following problems. SHOW ALL WORK.

1. A 20 kg block slides across a horizontal surface. If the coefficient of kinetic friction between the block and the surface is 0.20, what is the force of kinetic friction that acts on the block?



2. The coefficient of static friction between a 2.5 kg block and a rough surface is 0.80. What is the maximum static frictional force that can act on the block?



3. A 1.5 kg block is pulled across a horizontal surface that has a coefficient of kinetic friction of 0.60.
- a. What is the force of friction exerted by the surface on the block?



- b. If the block is pulled by a 12 N force, what is the net force acting on the block?

Work each of the following problems. SHOW ALL WORK.

c. What is the acceleration of the block?

4. A 2.0 kg block is pulled across a horizontal surface by a 15 N force at a constant velocity.



a. What is the net force acting on the block?

b. What is the force of friction acting on the block?

c. What is the coefficient of friction between the block and the surface?

Work each of the following problems. SHOW ALL WORK.

5. A 1.0 kg water balloon falls downward and experiences a 4.9 N air resistance as it approaches the ground. What is the acceleration of the water balloon when it experiences this air resistance?



6. What force is necessary to pull a 10 kg sled across a horizontal surface at a constant velocity if the coefficient of kinetic friction between the sled and the ground is 0.25?



7. What is the acceleration of a 10 kg block that experiences a 50 N applied force as it slides across a horizontal surface where the coefficient of kinetic friction between it and the surface is 0.10?



Name:

Date:

Work each of the following problems. SHOW ALL WORK.

8. A 25 kg sled is pulled across a horizontal surface by a 200 N force at a constant velocity. What is the coefficient of friction between the sled and the surface?

