1. Define inertia. Give an example for an object being in motion and at rest.

2. Calculate the force of gravity on a 47 kg object located on the Earth, Moon, and Mars. (461 N, 77 N, and 175 N)

3. Summarize what physical process causes the force of friction.

4. Suppose a box requires 100 N of force to begin to move. You start by applying 50 N of force and slowly increase that force until the box moves at a constant velocity.
   a. Describe the forces of friction that are involved.

   b. Would the minimum force necessary to keep the box moving at a constant velocity be less than, equal to, or greater than 100 N? Provide a brief explanation to your answer.

5. A 30 kg box is moved with a net force of 17 N. The applied force necessary is 105 N.
   a. What is the force of friction? (-88 N)

   b. . What is the normal force? (294 N)

   c. What is the coefficient of kinetic friction? (0.30)

6. A 52 kg object is being pulled with an applied force of 217 N. The coefficient of kinetic friction is 0.12. Calculate the net force acting on the object? (156 N)

7. A 65 kg person is pressed up against the wall using an applied force of 1500 N. For the person not to fall, calculate the minimum coefficient of static friction necessary between the wall and the person. (0.43)