Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Newton's First Law: Inertia

Problem

1. How much (in newtons) does a 10.0-kg bag of grass seed weigh?

2. A person weighs 650 N. What is the mass of the person?

3. How much (in newtons) does 0.60 kg of salami weigh?

4. On the moon, the acceleration due to gravity is $\frac{1}{6}$ that on Earth. What would be the weight of 0.9 kg of bologna on the moon?

5. On the surface of Jupiter, the acceleration due to gravity is about 3 times that on Earth. How much would a 0.40-kg rock weigh on Jupiter?

6. On the surface of Jupiter, the acceleration due to gravity is about 3 times that of Earth. What would be the mass of a 170-kg rock on Jupiter?

7. What is the magnitude of the resultant of a 6.0-N force acting vertically upward and a 4.0-N force acting horizontally?

8. Two forces of 10 N both act on an object. The angle between the forces is 90°. What is the magnitude of their resultant?

9. The following forces act on an object: 9 N north, 52 N south, and 55 N west. What is the magnitude of the net force?

10. A 230.0 kg bear grasping a vertical tree slides down at constant velocity. What is the friction force between the tree and the bear?