PHYS 101 g = 10 m/s2 Newton’s Second Law Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

0. Practice mastery quiz for chapter-4.

1. State Newton’s second law.

2. Describe an activity to demonstrate Newton’s second law.

3. An object of mass 10 kg is accelerated upward at 2 m/s2. What force is required?

4. A force of 200 N is exerted on an object of mass 40 kg that is located on a sheet of perfectly smooth ice.
(a) Calculate the acceleration of the object.
b) If a second object identical to the first object is placed on top of the first object, what acceleration would the 200 N force produce?

5. An object of mass 30 kg is in free fall in a vacuum where there is no air resistance. Determine the acceleration of the object.

6. An object of mass 30 kg is falling in air and experiences a force due to air resistance of 50 N.
a. Determine the net force acting on the object and
b. Calculate the acceleration of the object.

7. Just before opening her parachute a skydiver of mass 50 kg reaches terminal velocity. Calculate the force of air resistance.