**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per.\_\_\_\_\_**

**Homework Questions-Newton’s Laws**

1. In what direction does friction act? Air Resistance?
2. Which has more inertia a two kilogram rock or a 1 kilogram rock?
3. Forces of 10 Newtons and 15 Newtons in the same direction act on an object. What is the net force on the object? What would be the net force if the forces acted in opposite directions?
4. Many automobile passengers suffer neck injuries when struck by cars from behind. How does Newton’s law of inertia apply here? How do headrests help to guard against this type of injury?
5. If an object has no acceleration can you say there are no forces acting on it? Explain.
6. What is the relationship between mass and weight?
7. A skydiver falls through the air. As the speed of the sky diver increases, what happens to the sky diver’s acceleration? What is the acceleration when the sky diver reaches terminal speed?
8. What physical quantity is a measure of the amount of inertia on an object?
9. How much does a 230 kg crate weigh on the moon? On earth?
10. Can an object be in equilibrium with only one force acting on it? Explain.
11. How much mass is in a 2450 N object? 1300 N?
12. What is the weight of a 75 kg person? 125 kg person?

For Questions 13-16 Draw a force diagram for the object drawing and labeling all the forces acting on the object. Find the net force and acceleration on the object.

1. A person pulls on a 130 kg box with a force of 300 N. If another person pulls on the box the opposite direction with a force of 150 Newtons what is the:

Net force =

Acceleration =

1. A person pulls on a 45 kg box with a force of 200 Newtons. If another person pulls on the box with a force of 320 Newtons in the opposite direction and the friction on the box is 55 Newtons what is the:

Net force=

Acceleration =

1. A person pulls on a 50 kg box with a force of 300 Newtons. If the friction force on the box is 200 Newtons. What is the:

Net force =

Acceleration =

1. A 70 kg ( 686N) person is falling. If the air resistance on the person is 500 N at a given moment what is the:

Net force =

Acceleration =