



Name: _____
Date Started: _____ Date Completed: _____ Score: _____

Learning Activity Sheet Acceleration

I. Directions: In the space provided, write **T** if the statement is true; otherwise write **F** for false.

- _____ 1. If you use the same force to push a truck and a car, the car will have more acceleration than the truck because the car has less mass.
- _____ 2. When riding a bicycle, the bicycle acts as the mass, and the leg muscles pushing on the pedals of the bicycle is the force.
- _____ 3. Newton's law of acceleration conceptually and mathematically describes the acceleration of an object in terms of its mass and the net force applied
- _____ 4. The heavier person will walk faster because he/she has greater acceleration.
- _____ 5. The acceleration depends inversely upon the object's mass.

II. Directions: In the space provided, write the letter of the correct answer.

- _____ 1. A net force of 3 newtons pushes a 100-gram box. What is the acceleration of the box?
A. 5 m/s² B. 10 m/s² C. 20 m/s² D. 30 m/s²
- _____ 2. Which of the following types of force applies to cables, strings, and ropes?
A. applied force B. friction C. Tension D. weight
- _____ 3. A 35-kilogram box is pulled along a frictionless floor by Lee with 25 newtons to the right and by Ty with an unknown force to the left. What is the F_{net} on the box?
A. + 10 N B. + 25 N C. - 10 N D. - 25N
- _____ 4. If the same force is applied to an object with a large mass, what happens to the acceleration of the object?
A. It decreases. B. It increases. C. It remains the same. D. It is equal to the mass.
- _____ 5. If you stand on a weighing scale in an elevator and notice that your weight is decreasing, what would you conclude about the elevator?
A. It accelerates upward. C. It moves at a constant velocity upward.
B. It accelerates downward. D. It moves at a constant velocity downward.

III. Directions: Solve the following problems involving Newton's second law of motion. Write your solution on the space below.

1. Find the acceleration of a 2-kilogram block pushed on a smooth floor with a 20-newton force.
2. With the same acceleration, and a force of 40 newtons, what mass can be moved?