

# FORCE AND MOTION REVIEW

- \_\_\_\_\_ 1. Acceleration
- \_\_\_\_\_ 2. Velocity
- \_\_\_\_\_ 3. Inertia
- \_\_\_\_\_ 4. Net Force
- \_\_\_\_\_ 5. Force
- \_\_\_\_\_ 6. Displacement
- \_\_\_\_\_ 7. Motion
- \_\_\_\_\_ 8. Speed

- A. push or pull that acts on an object, causing it to move, change speed or direction, or stop moving.
- B. change in position or place.
- C. how far an object moved from its original position and in what direction the object moved.
- D. rate at which the position of an object changes.
- E. rate at which an object's velocity changes.
- F. rate at which an object moves in a certain direction.
- G. tendency of a still or moving object to resist a change in its motion.
- H. force that results from the combination of all forces that act on an object

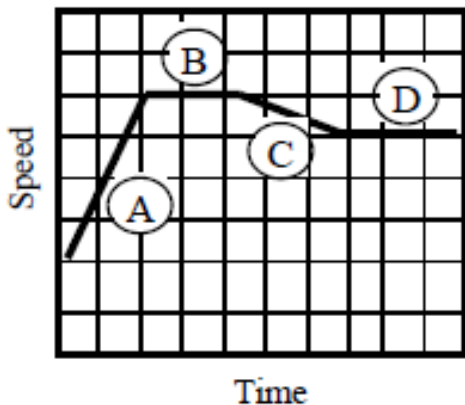
## Which of Newton's Three Laws Applies? Law 1, 2, or 3?

- \_\_\_ When you put a book on a table the table pushes on the book.
- \_\_\_ A person is pushed forward into their seatbelt when a car stops.
- \_\_\_ A larger car takes more force to move.
- \_\_\_ A person leans on a wall and the wall pushes back.
- \_\_\_ A brick sits on a table until you push on it.

## Speed (S) or Velocity (V)

- \_\_\_ A person walks 3.5 mph.
- \_\_\_ A bird flies 20 m/s.
- \_\_\_ A bike goes 30 m/s toward town.

Speed vs. Time



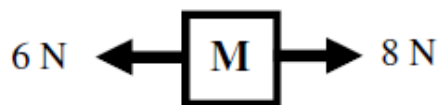
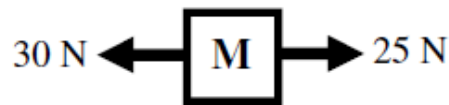
Which graph segments fit the following:

Constant speed:

Deceleration:

Accelerating:

## Understanding Net Force



Which way will it accelerate?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The unit of force is the \_\_\_\_\_.

Force = \_\_\_\_\_  $\times$  \_\_\_\_\_

Average speed = \_\_\_\_\_  $\div$  \_\_\_\_\_

If a person pulls on a cart to the right with a force of 10 N and a second person pulls to the left with a force of 3 N, what is the net force (and direction) on the cart?

If a person is pushing a cart with a force of 40 N and it accelerates at  $0.5 \text{ m/s}^2$ , what is the mass of the cart?

What is the acceleration of a 3 kg rock that is thrown with a force of 18 N?

A 50 kg object is accelerating at a rate of 5 m/s. Calculate the force needed to produce this acceleration.

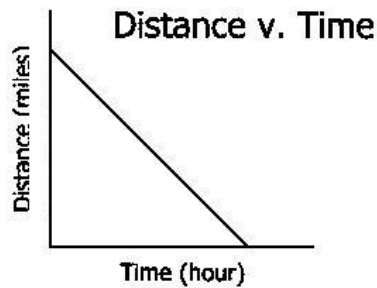
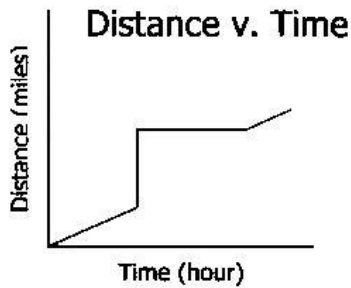
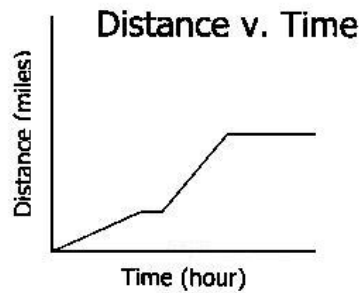
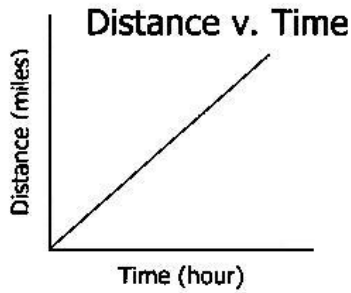
A car travels 2.5 hours in a northerly direction for 300 km. Determine the car's speed and velocity.

time =

distance =

direction =

A woman drives to the grocery store. During the trip, the woman drives a constant speed of 35 mph for 5 minutes, and then stops at a stop sign. After waiting for traffic, the woman drives an additional 20 minutes at 60 mph before parking in the grocery store parking lot. Circle the distance/time graph that best matches the woman's journey. Justify your answer.



Examples of Motion: Are the following examples representing SPEED, VELOCITY OR ACCELERATION?

1. A greyhound dog can run about 40 mi/hr. \_\_\_\_\_
2. Monarch butterflies fly 12 mi/hr south as they migrate. \_\_\_\_\_
3. A car slows from 60 mi/hr to 25 mi/hr. \_\_\_\_\_
4. A car turns left while maintaining the same speed. \_\_\_\_\_
5. A trip from Austin to Dallas takes about 3 hours going 65 mi/hr north. \_\_\_\_\_
6. Canadian geese can fly approximately 75 miles in 3 hours. \_\_\_\_\_
7. A car increases speed from 30 mi/hr to 65 mi/hr. \_\_\_\_\_

PLEASE USE THIS REVIEW AND YOUR NOTES FROM CLASS TO PREPARE FOR YOUR TEST! 😊