

Name: \_\_\_\_\_

Period: \_\_\_\_\_

**PHYSICAL SCIENCE 2ND SEMESTER**

$mv = m \text{ \_\_\_\_\_\_ } \times v$   
 $F/a = F \text{ \_\_\_\_\_\_ } a$   
 $T_2 + T_1 = T_2 \text{ \_\_\_\_\_\_ } T_1$   
 $mv = m \text{ \_\_\_\_\_\_ } v$   
 $\Delta D/\Delta T = \Delta D \text{ \_\_\_\_\_\_ } \Delta T$

MA = \_\_\_\_\_  
 F or  $F_w =$  \_\_\_\_\_  
 d or  $\lambda =$  \_\_\_\_\_  
 W or E = \_\_\_\_\_  
 R = \_\_\_\_\_  
 I = \_\_\_\_\_  
 p = \_\_\_\_\_  
 V = \_\_\_\_\_  
 P = \_\_\_\_\_  
 f = \_\_\_\_\_  
 T = \_\_\_\_\_  
 a = \_\_\_\_\_

8 kgm/s  
 8  $\Omega$   
 8 w  
 8  
 8 sec  
 8 N  
 8 m  
 8 A  
 8 m/s<sup>2</sup>  
 8 V  
 8 Hz  
 8 J

A car travels 88 meters in 11 seconds. Find the car's speed.

You travel from Maine (100 miles away) to Vermont (300 miles away), in 4 hours. Calculate your speed.

A bike goes 12 m/s for 6 seconds. Calculate how far the bike traveled.

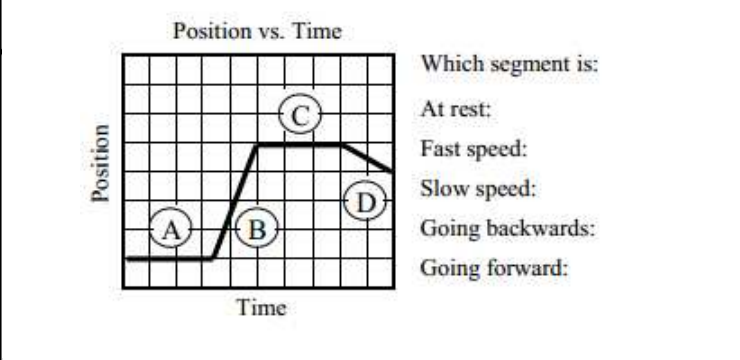
A plane stops from 300 mph in 15 seconds. Calculate the planes acceleration.

N
S

If the two magnets are **repelling** each other, label N and S on the second magnet.

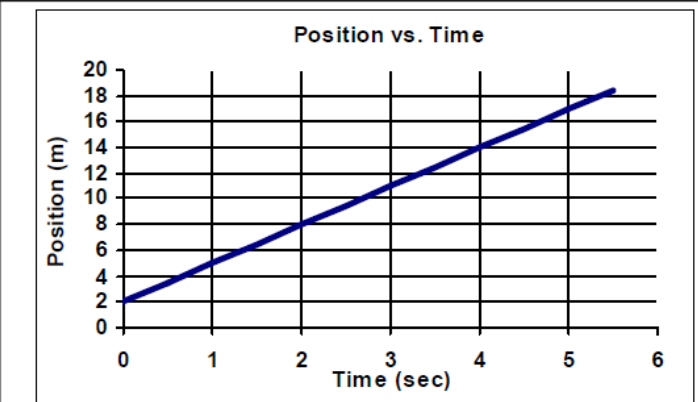
Formulas: Fill in the correct formulas

Velocity	Acceleration	Force
Force (weight)	Slope	



If you go to another planet what would change? Weight or mass?

If you were in space what would stay the same? Weight or mass?



Which of Newton's Three Laws Applies?

- A paddle-wheel boat pushes on the water and the water pushes back to move the boat.
- Fighter pilots feel massive amounts of force when their planes turn quickly.
- A rolling ball hits your leg hard to stop.

Where was the object at 4 seconds? \_\_\_\_\_

When did the object reach 8 meters? \_\_\_\_\_

Find the slope of the graph (must show work)

What does the slope you just found stand for? \_\_\_\_\_

Using  $g = 10 \text{ m/s}^2$ , find the weight of a 3 kg mass.

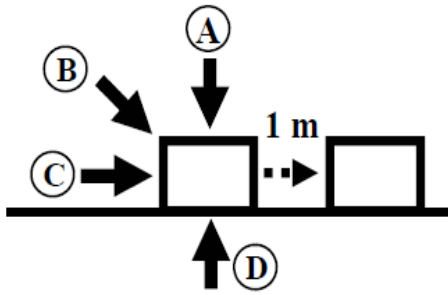
A 35 kg bike accelerates at  $5 \text{ m/s}^2$ . With what force was the person pedaling?

If 40 N is pushing to the right and friction is 10 N, find the net force and acceleration of a 6 kg object.

If you drop a full bottle of water and an empty bottle of water, which one hits the ground first and why?

What is the Law of Conservation of Energy?

A ball on the top of a hill has \_\_\_\_\_ energy; when it falls down the energy has been transformed into \_\_\_\_\_ energy. The Law of Conservation of Energy says that the amounts of these two energies are \_\_\_\_\_.



Which of the four forces are doing work on the object?

Why?

1. Conduction; 2. Convection; 3. Radiation

\_\_\_\_ From electromagnetic radiation (light rays).

\_\_\_\_ In a pot of water.

\_\_\_\_ Putting your hand on a hot car.

\_\_\_\_ Liquids and gases become less dense when hot and rise, causing currents.

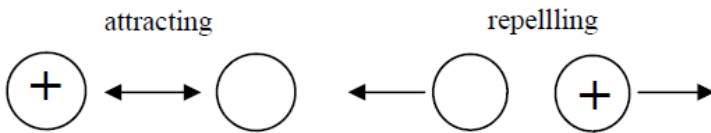
Does heat rise?

What does rise?

What is thermal equilibrium?

Heat always moves from hot to cold OR cold to hot?

What are the charges of the second objects?



What is electricity?

What is the difference between parallel and series circuits?

Where does light come from?

Formulas: Fill in the correct formulas

Work

Power

Ohm's Law

Power (electric)

Thermal; Nuclear; Radiant; Mechanical; Chemical; Electrical

\_\_\_\_ An acorn in a tree.

\_\_\_\_ Fusion in the sun.

\_\_\_\_ Energy from a wall power plug.

\_\_\_\_ The light of the sun.

\_\_\_\_ Something hot.

\_\_\_\_ In a piece of wood.

A 8 kg cart is rolling 5 m/s. Calculate kinetic energy.

A 30 N rock is moved 4 meters. How much work is done?

How much energy was used to move the rock?

If done in 3 seconds, how much power was used?

A 2 kg rock on a 6 meter ledge has how much potential energy?

How much kinetic energy can it have if it falls?

What's the total charge of an object with 14 electrons and 6 protons?

An atom that loses electrons becomes positive/negative.

An atom that gains electrons becomes positive/negative

Increases (I)  
Or  
Decreases (D)

Increasing resistance \_\_\_\_\_ current  
Decreasing resistance \_\_\_\_\_ current  
Increasing voltage \_\_\_\_\_ current  
Decreasing voltage \_\_\_\_\_ current

How big a battery is needed to produce 2 amps through a 4 ohm light bulb?

A 12 volt battery produces what current through a 6 Ω resistor?