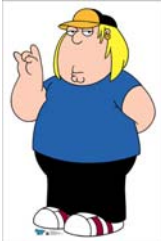


Unit 3 Review – Gravitational, Electrical, Magnetic, and Electromagnetic Forces

Ah, if memory serves me this is the physics department.

That would explain all the gravity.



GRAVITY

Remember that Force = Mass x Acceleration so the force of gravity _____ as the mass of an object _____.

So if every object in the universe exerts a _____ force on you, then why are we not pulled into the sun? The sun has more mass than the earth so its gravitational force is greater than the earth's.

All objects fall to earth at the same rate. This is the acceleration due to gravity (9.8m/s²)

The _____, _____, & _____ of an object do not affect its acceleration due to gravity.

Are Mass and Weight the same thing? _____

Mass is the measure of _____

Weight is the measure of _____

Calculate the following:

A United States flag with a mass of 4.5 kg is placed on the moon. What is its weight or force of gravity on the moon if the acceleration due to gravity is 1.6 m/s² on the moon?

HINT: use $F = mg$

ELECTRICAL FORCES

All matter contains charges which can be _____ or _____.

Depending on the net charge matter is either positive, negative, or _____.

_____charges attract and _____charges repel.

There are electric _____ between all electric charges because of the electric _____ surrounding the charges.

Electrical forces are much _____ than Gravitational Forces.

Can objects gain or lose electric charges? _____

Draw Electric Fields

Lone Positive Charge



Lone Negative Charge



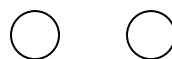
Two Positive Charges



Two Negative Charge



Mixed Charges



I've been working on a plan. During the exam, I'll hide under some coats, and hope that somehow everything will work out.



Sorry that won't work during your IPC test so go home and study!

Magnetic Forces

All Magnets have _____ and _____ poles. Always? _____

The North pole of a magnet will _____ the North pole of another magnet.

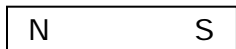
The South pole of a magnet will _____ the North pole of another magnet.

The magnetic _____ around a magnet creates a _____ on other magnets.

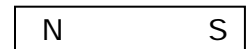
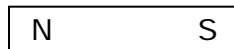
Magnetic field lines point _____ from the North pole and _____ the South pole.

Draw Magnetic Fields

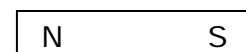
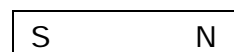
Lone Magnet



Between these two magnets



Between these two magnets



Magnetic and Electromagnetic Forces

A _____ can be created using electric current.

Are compasses attracted by electric currents? _____

If a generator moves an electric charge through a magnetic field it will create _____

To create a current a magnet must be _____ near a coil of _____.

Therefore, if a motor uses electric currents to produce mechanical power what must it contain? A _____ and _____

Vocabulary Match-up

Write out the definitions for the following words:

Universal Force –

Gravitational Force –

Electrical Force –

Electrical Field –

Electric Charge –

Magnet –

Magnetic Domain-

Natural Magnet-

Magnetic Force –

Magnetic Field –

Electromagnet –

Motor –

Generator –