Name: _____

Period: _____

Test Review, Gravity and Friction

15

Read pages 52-57 and complete the notes below.

What is gravity?_____

What does gravity depend on?_____

At what rate do all object accelerate while falling here on the planet Earth?_____

Why is gravity weaker on Mars than Earth._____

_____

Why does the moon orbit Earth?_____

_____

What is the law of universal gravitation?_____

_____

What is the Equation of Universal Gravitation?_____What two things are required to be able to calculate the gravitational pull on two objects?_____

What is Friction and what causes it?_____

List 4 types of Friction._____

_____

How does Friction affect acceleration?_____

_____

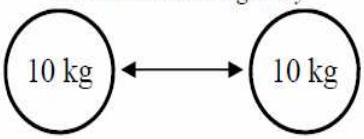
Gravity

Gravity is a force that pulls any two masses towards each other. Nothing can stop gravity.

Gravity increases with mass.

Less mass: less gravity

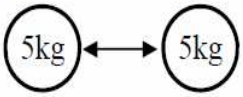
More mass: more gravity



Heavier things have more gravitational force (weight) because they have more mass.

Gravity decreases with distance.

Less distance: more gravity

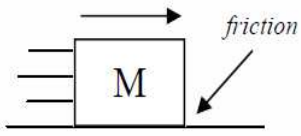


More distance: less gravity

As a spaceship gets closer to a planet, the gravity between the planet and the ship gets stronger.

Friction

Friction is a force that opposes moving objects and occurs any time objects touch. Friction causes heat and takes energy away from moving objects and machines.



The object and the table heat up as the two object rub against each other.

Rough surfaces have more friction than smooth surface.

An object must be touching something to have friction.

Air friction (air resistance) occurs when objects move thru air. Air friction increases with speed.

Friction can be helpful. A car use the friction of its tires to turn corners.

What is gravity?

Does gravity increase or decrease?
___ If you increase the mass of one of the objects?
___ If you decrease the distance between the two objects?
___ If you decrease one of the masses?
___ If the objects are farther apart?

If an object is not touching a table is there friction between them?

What is another name for air friction?

Friction always causes what?

Give an example of good friction.

Give an example of bad friction.

Newtons	A. Variable for acceleration
m/s	B. Sum of all forces
Joules	C. Unit for force
a	D. Unit for speed
kg	E. Variable or mass
m/s^2	F. Unit for acceleration
kg*ms	G. Unit for energy
F_{net}	H. Unit for mass
m	I. Unit for momentum

Balanced or unbalanced forces?

____ 10 N left and 5 N right?
____ An object accelerating?
____ An object at constant speed?
____ An object at rest?
____ If a = 0?
____ If $\Delta v = 0$?
____ When an object turns a corner?

Balanced or unbalanced forces?
Calculate the net force and acceleration of the object.

Which falls faster: heavy or light objects?
Why?

Will it accelerate faster or slower?
____ If you increase an object's mass.
____ If you increase the force on the object.

_____is a force that resists motion between two surfaces that are in contact.

The strength of the gravitational force between two objects depends on which two things?

Forces that cancel each other are called _____ forces.

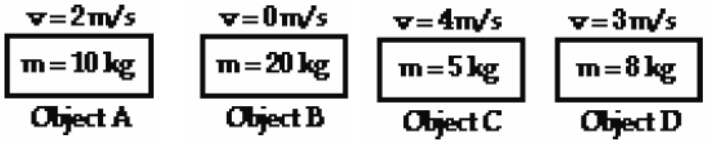
A change in motion is described by _____.

A ball is thrown straight up in the air. According to Newton's first law of motion, what is the reason for the ball falling back to Earth?

When unbalanced forces act on an object, _____.
A. the object accelerates
B. friction becomes greater than the net force
C. the object speeds up
D. he net force is zero

Mass and velocity values for a variety of objects are listed below. Rank the objects from smallest to greatest inertia

_____<_____<_____<_____



Which has more inertia:
A 50 kg object or a 10 kg object?
A 30 kg object on the earth or in space?
A 20 kg object going 50 m/s, or a 30 kg object at rest.

What is the difference between mass and weight?

Which changes in space?

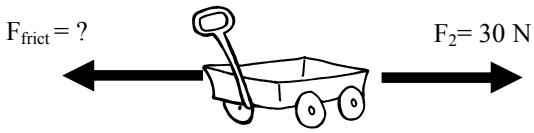
Mass or Weight: ___ 20 N; ___ 30 kg?

A 4 kg object accelerates 12 m/s^2 to the left, find the force on it.

A 30 N net force pulls to the right on a 5 kg object. Find its acceleration.

Calculate the weight of a 12 kg object.

If a wagon is being pulled with 30 N of force to the right, if the forces stayed constant, how much friction would be needed to keep the wagon moving at a constant speed?



Which of the two above objects applies: M_1, M_2, both, or neither?

A. _____ Could be at rest.
B. _____ Could be accelerating.
C. _____ Could be moving to the left.
D. _____ Has a net force.
E. _____ Is at constant speed.
F. _____ Could be moving.
G. _____ Could be accelerating to the right.
H. _____ Could be moving up.
I. _____ Could have a velocity = 0m/s.
J. _____ Has no net force.