MEGA PHYSICS CONTEST ZOOMIGN SCHOOL

Questions Responses 10 Total points: 100

10 responses

Not accepting responses

Message for respondents

This form is no longer accepting responses

Summary Question Individual

Insights

Average
67.5 / 100 points

Median
60 / 100 points

Range
53 - 87 points

Total points distribution

Frequently missed questions

Question	Correct responses
whats magnetic induction?	3 / 10
1. Give the reading in the following diagram.	0 / 10
. A uniform rod of length 1.0 m is hung from a spring balance as shown and balanced in horizontal position by a force of 1.6 N. Determine; a) The weight of the rod	4 / 10
If the springs shown below are similar and the constant of proportionality (k) is 100 Nm-1, determine total extension in each arrangement.	3 / 10
state three Characteristics of waves	4 / 10
A horizontal pipe of cross-sectional area 50 cm2 carries water at the rate of 0.20 litres per second. Determine the speed; a) Of the speed of water in the pipe.	3 / 10

Scores

Release scores

Email	Score / 100
onyanimose@gmail.com	55
mugalithadorothy@gmail.com	57
cindynn2005@gmail.com	60
paraxsalah@gmail.com	84
samuelmuriithi740@gmail.com	73
popedistro65@gmail.com	71
nimomuhumed01@gmail.com	53
dorothymwikali84@gmail.com	60
[illegible]	75

NAME

10 responses

Judy

Ryn dee

Beryl Onyango

Dennis wangalwa

Elvis

Samuel mureithi

Francis Kuria

Nimo Mohamed

Njuguna Cindy Njeri

SCHOOL

10 responses

Pioneer

St joseph school

St.Alberts Girls High School Ulanda

Chesamisi

KB

Othaya boys

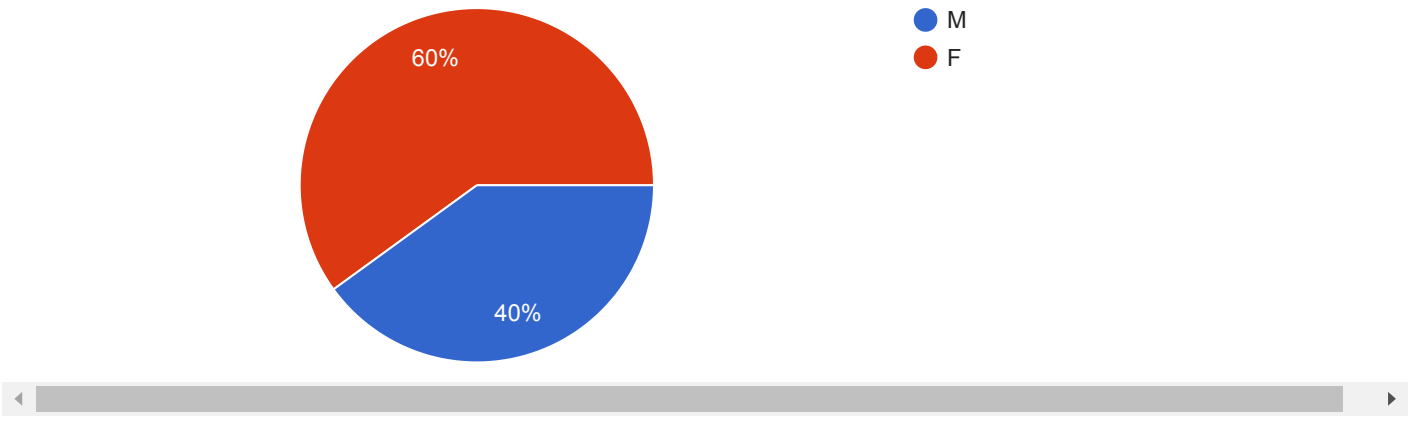
Kirwara High

Ghanima el-marzuq girls

Karima Girls High School

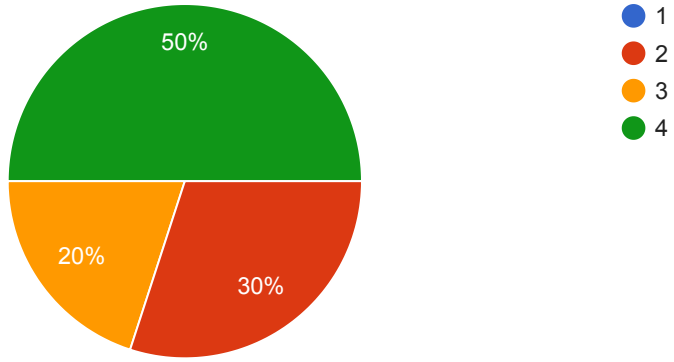
GENDER

10 responses



CLASS

10 responses



State 4 Basic laboratory safety rules ?

10 responses

Do not run while in the laboratory, while in the laboratory you should be properly dressed,hands should be washed after doing an experiment, the floors and the working services should be kept dry

Avoid touching sockets with wet hands,Avoid inserting foreign objects on sockets,Locate where the fire extinguishers and main switch are,Use the lab under the teacher's permission

Hands must be washed before leaving the laboratory,any waste after an experiment must be disposed of appropriately,laboratory equipments should not be taken out of the laboratory and never plug in foreign objects into the electrical sockets

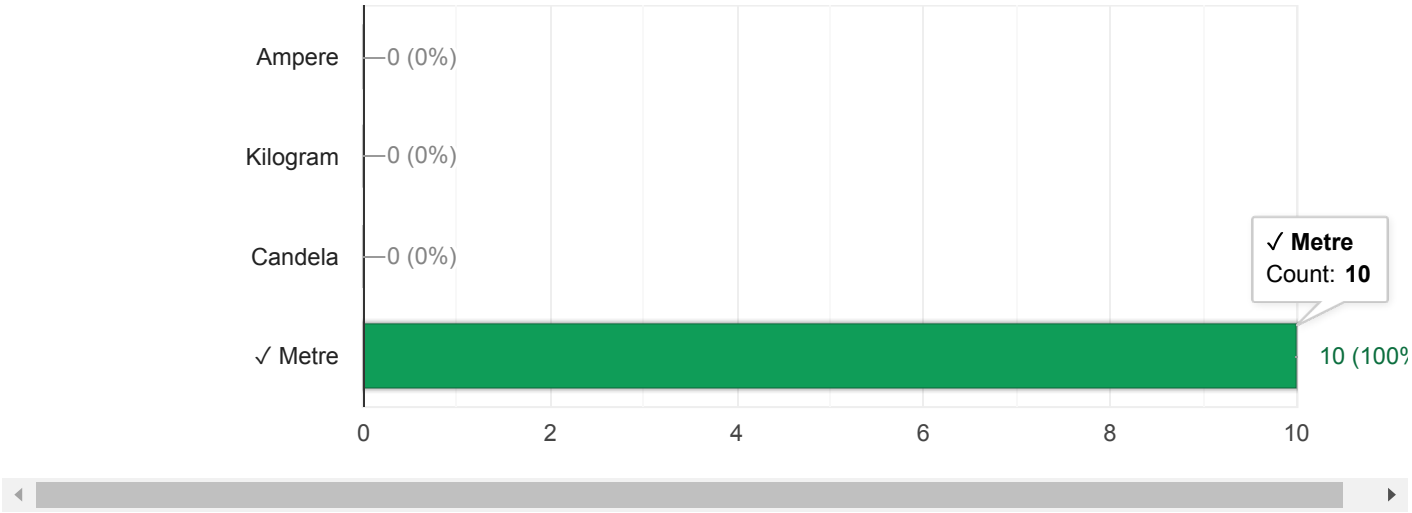
Always wash hands before leaving the laboratory All gadget not in use should be put off, incase of accidents walk out calmly Follow instructions

You should not run in the laboratory,Do not perform experiments without permission or supervision by a teacher, Incase of fire outbreak walk calmly out of the laboratory without scrambling on the door,Do not wear loose clothes and ensure you wear closed shoes

Do not eat or drink anything in the laboratory to avoid the poisoning.Do not run in the laboratory to avoid

match the following basic quantity with their SI unit Symbols length, mass, electric current and luminous intensity

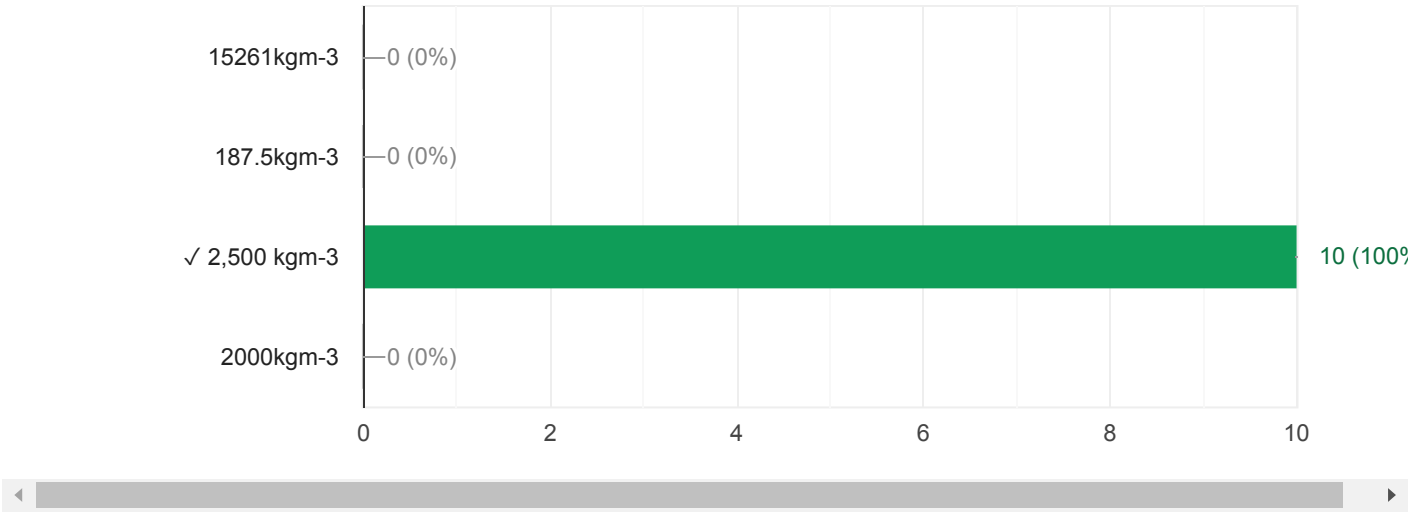
10 / 10 correct responses



Row 1: Length

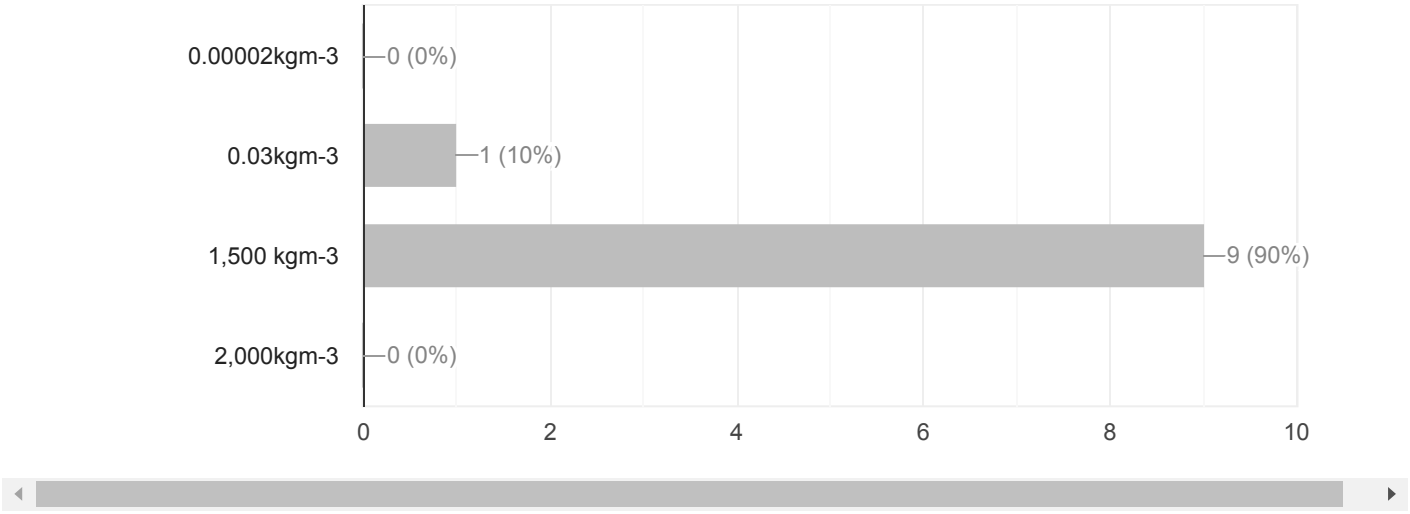
A block of glass of mass 187.5 g is 5.0 cm long, 2.0 cm thick and 7.5 cm high. Calculate the density of the glass in kgm-3.

10 / 10 correct responses



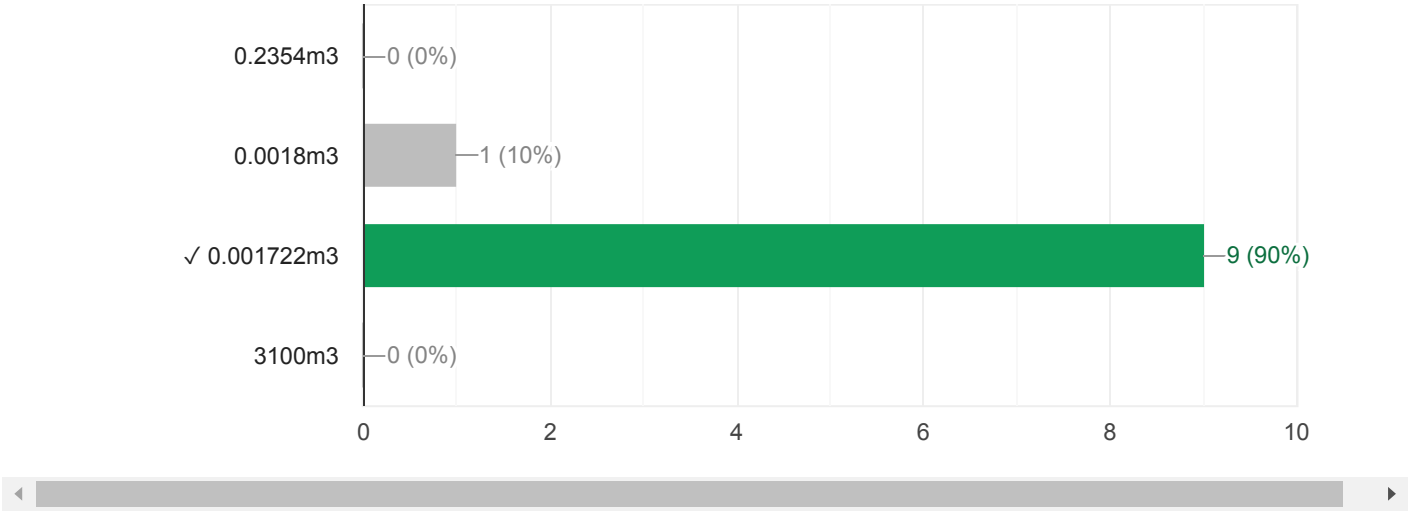
The mass of an empty density bottle is 20 g. Its mass when filled with water is 40.0 g and 50.0 g when filled with liquid X. Calculate the density of liquid X if the density of water is 1,000 kgm-3.

0 / 10 correct responses



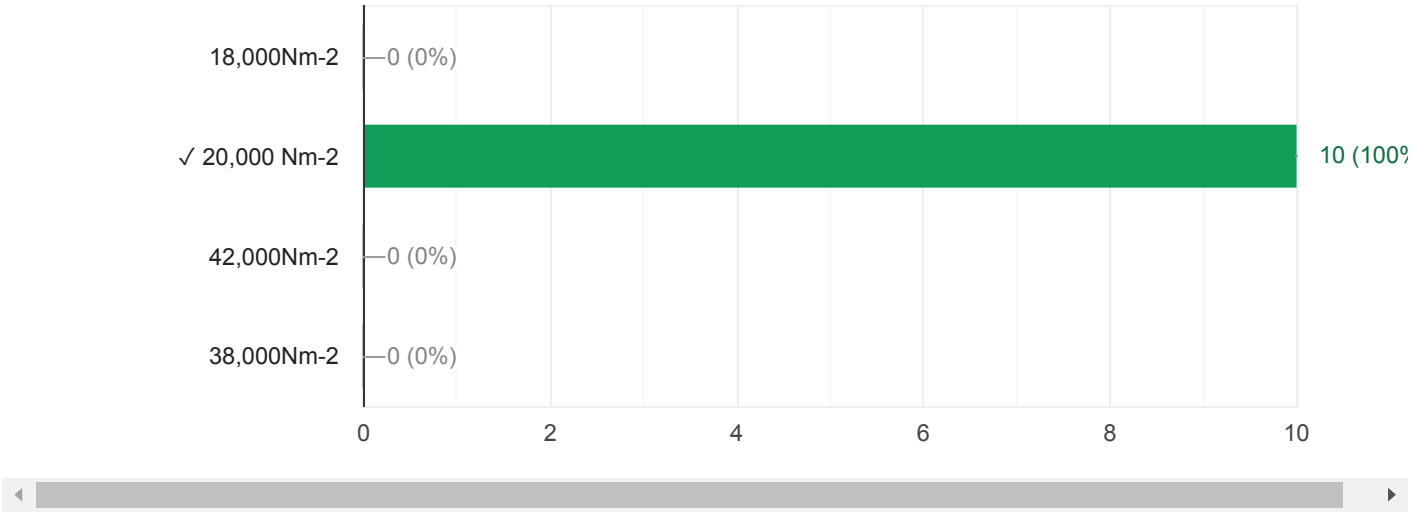
The density of concentrated sulphuric acid is 1.8 g/cm3. Calculate the volume of 3.1 kg of the acid.

9 / 10 correct responses



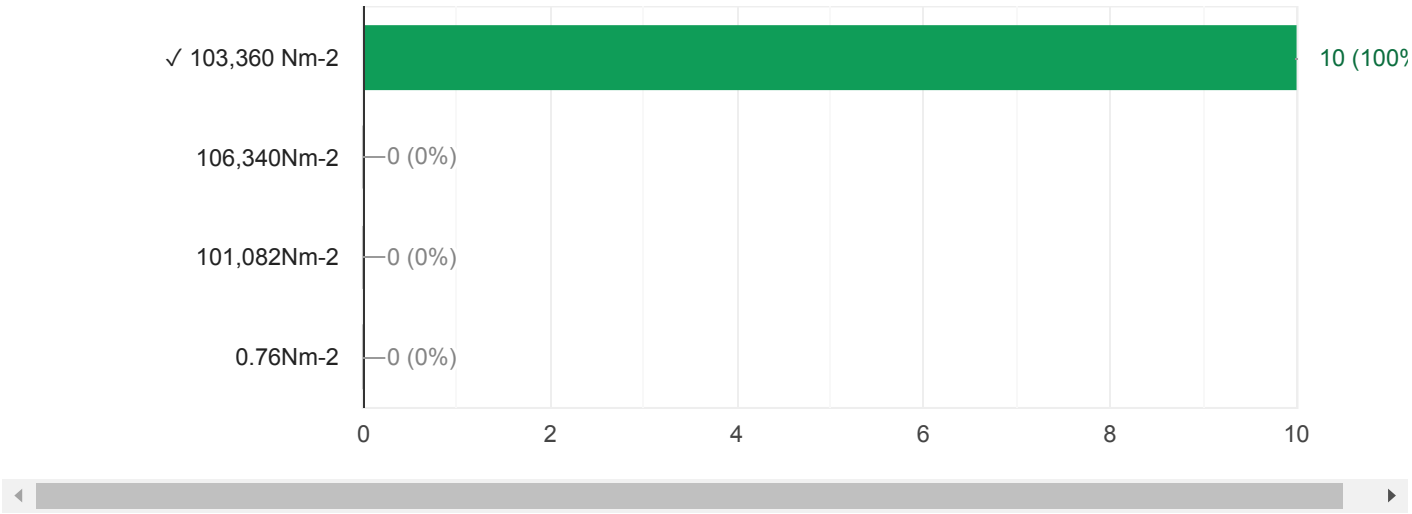
. A man of mass 84 kg stands upright on a floor. If the area of contact of his shoes and the floor is 420 cm2, determine the average pressure he exerts on the floor. (Take g = 10 N/Kg)

10 / 10 correct responses



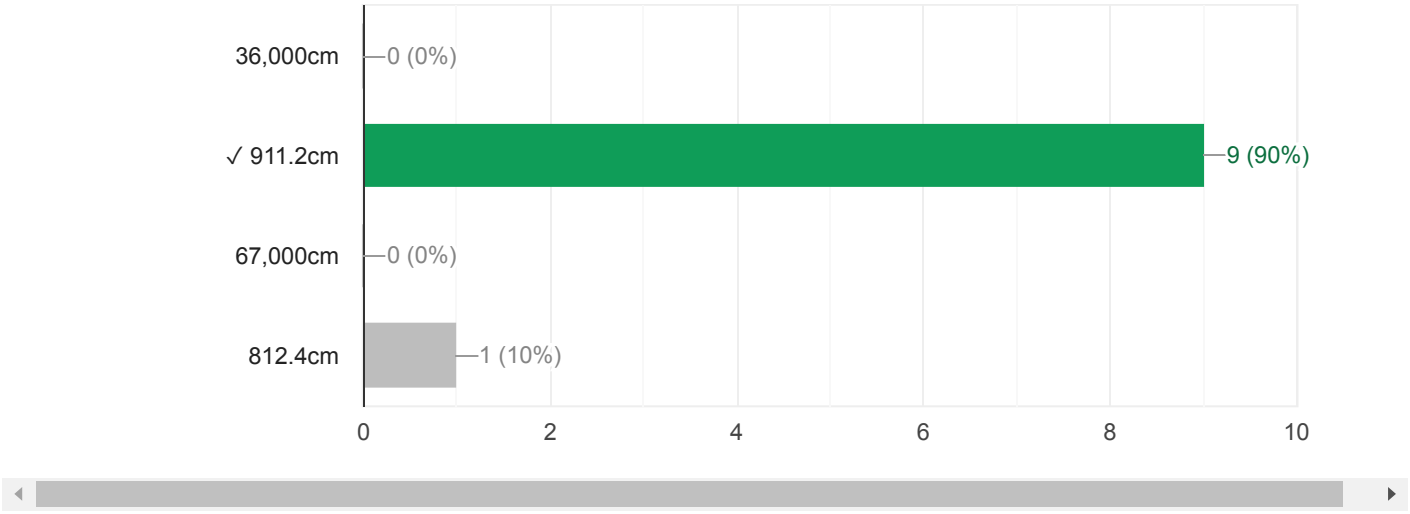
The density of mercury is 13,600 kgm-3. Determine the liquid pressure at a point 76 cm below the surface of mercury. (Take g = 10 Nkg-1)

10 / 10 correct responses



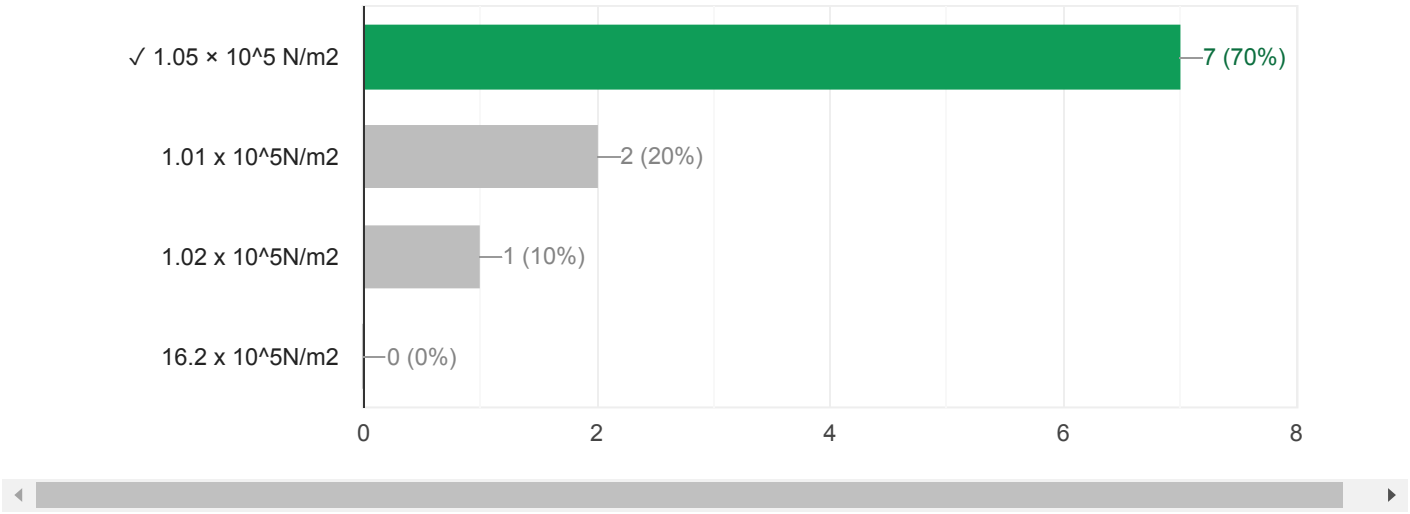
The height of the mercury column in a barometer is found to be 67.0 cm at a certain place. What would be the height of a water barometer at the same place? (Densities of mercury and water are 1.36 × 104 kg/m3 and 1.0 × 103 kg/m3 respectively.)

9 / 10 correct responses



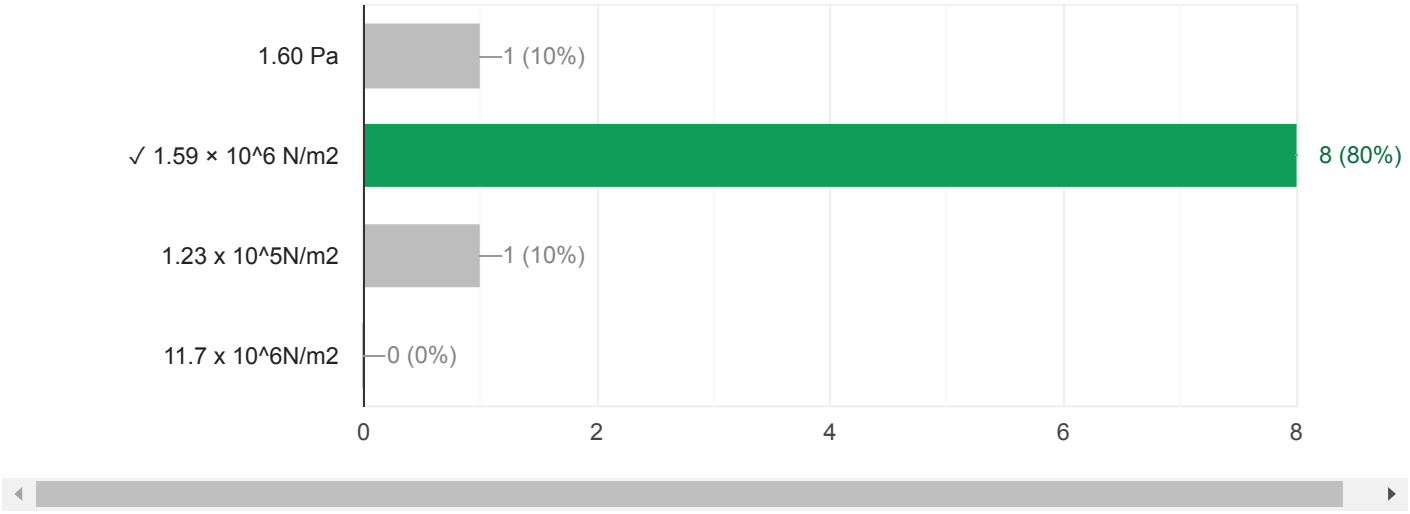
A man blows into one end of a U-tube containing water until the levels differ by 40.0 cm. if the atmospheric pressure is 1.01 × 105 N/m2 and the density of water is 1000 kg/m3, calculate his lung pressure

7 / 10 correct responses



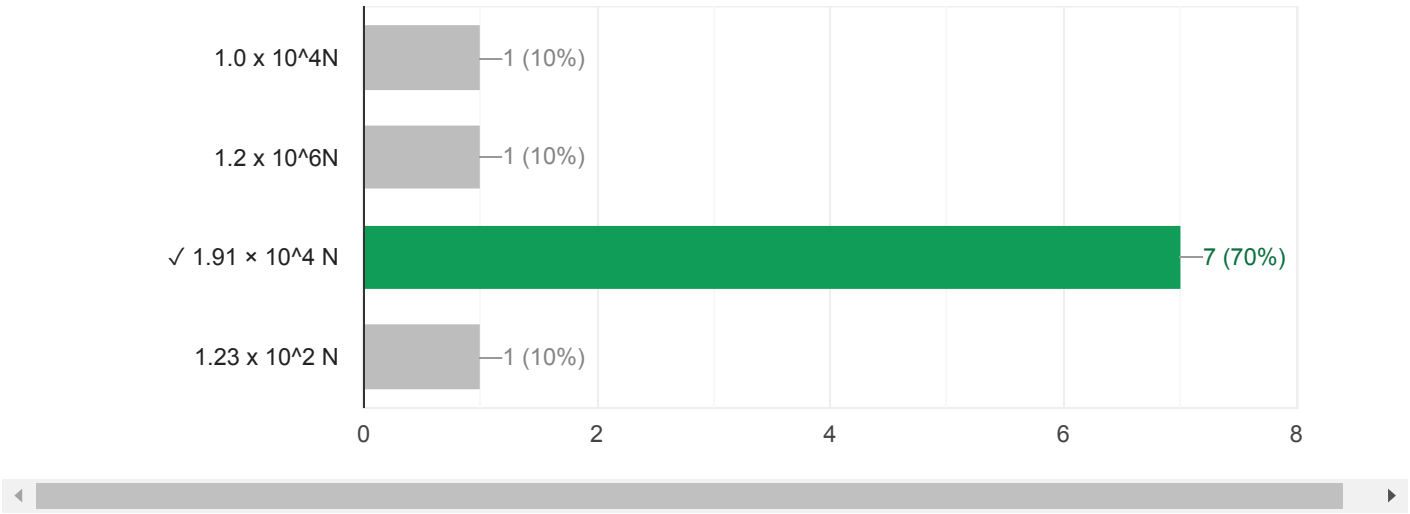
The master cylinder piston in a car braking system has a diameter of 2.0 cm. The effective area of the brake pads on each of the four wheels is 30 cm 2. The driver exerts a force of 500 n on the brake pedal. Calculate a) The pressure in the master cylinder

8 / 10 correct responses



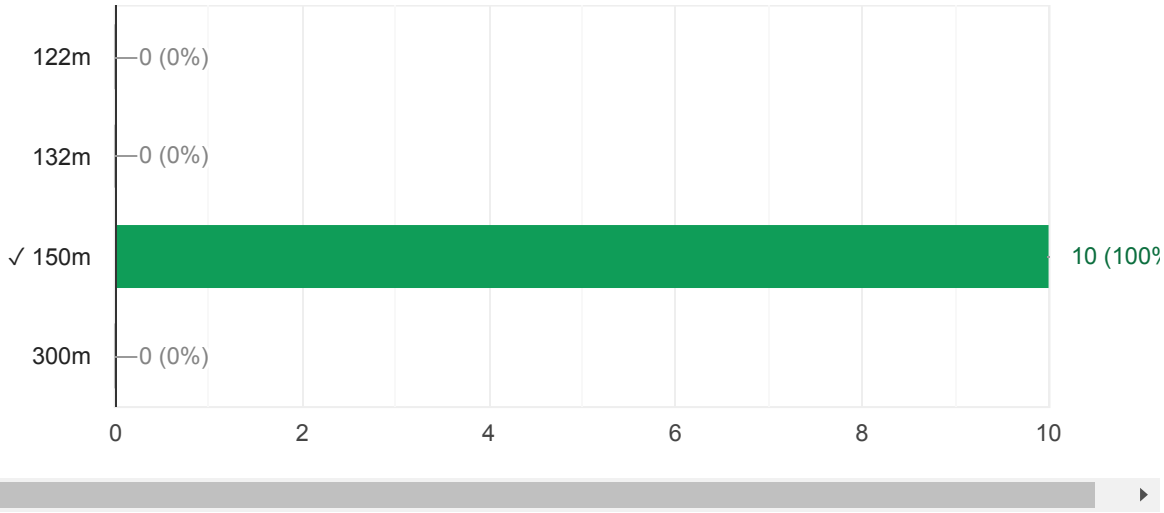
b) The total braking force in the car

7 / 10 correct responses



Calculate the height of a building 300 m away from a pinhole camera which produces an image 2.5 cm high if the distance between the pinhole and the screen is 5.0 cm.

10 / 10 correct responses



State four Uses of the electroscope

10 responses

To detect the presence of charge on a body, to test the sign of charge on a chargef body, to test the quantity of charge on a body, to test the insulation properties

To detect presence of a charge,the nature of the charge,the magnitude of the charge,and to detect whether it is an insulator or a conductor

To magnify objects

Detect charge, Mesuring amount of current, determine the voltage

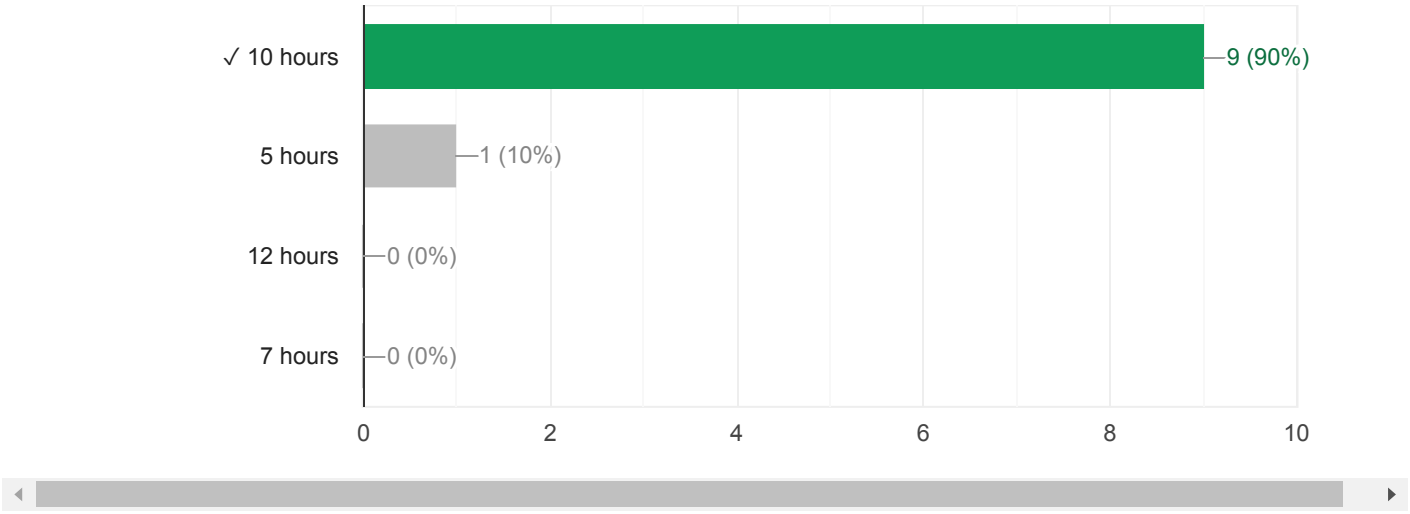
Used to show the presence of charges in a charged material,Used to test for the type of charge in a charged material,Used to show the insulating properties of a material,Used to test for the quantity of charge in a charged material

To detect the presences of charges.To test the signs of charges.To test for the insulation materials.To determine the quantity of the charges on the materials

To detect charge on a body,to charge a body ,to identify type of charge in a body

A battery is rated at 30 Ah. For how long will it work if it steadily supplies a current of 3 A?

9 / 10 correct responses



State four Advantages of alkaline accumulators over lead-acid accumulators

10 responses

Require little attention to maintain, they are lighter, large current can be drawn from them, can be kept in discharged condition for a long time before cells get damaged

They are rechargeable,they can stay in uncharged condition for long,they are cheap,they are readly available

Large currents can be drawn from them,they can be kept in a discharged condition for a long time before the cells are ruined,they require very little attention to maintain and they are lighter than the lead-acid accumulators

Large amounts of current can be drawn They are portable requires low maintenance

Alkaline accumulators are lighter than than a lead-acid accumulator, Alkaline accumulators require little attention to maintain, Alkaline accumulators can be stored in a discharged condition for a long period of time, Alkaline accumulators produce large amount of current per unit time

Large quantity of current can be drawn from them.It is more portable

State two Properties of magnets Properties of magnets

10 responses

Directional property, magnetic poles

They align facing north and south poles of the earth when suspended due to earth magnetic fields,They have same poles reppeling and different poles attracting

Magnetic poles and directional property

Directional property Attraction and repulsion

Directional property, Magnetic poles

Have two poles whose magnetism is stronger at the poles.When bar is suspended freely in the air rest facing north south pole.

Have two polarities,can be magnetised

Magnetic poles, field

whats magnetic induction?

10 responses

A method of magnetising a magnet which involves the use of two pins

This is the production of electromotive force across a conductor

Cling nails

Ability of a magnet to attract a magnetic materials

It is the process of magnetisation where the charged material acquires an opposite pole different from the charging material

Like poles unattract

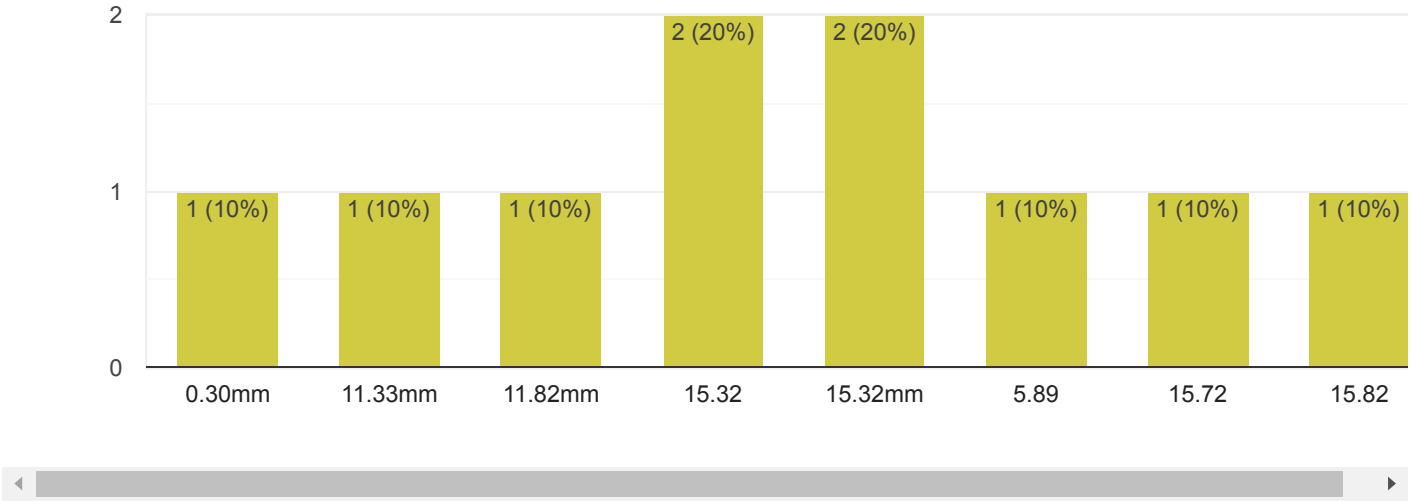
The process by which a material is magnetized by an outside magnetic field

It is the processing of magnifying an object using current

Magnetizing a magnetic material by bringing it into contact with a magnet

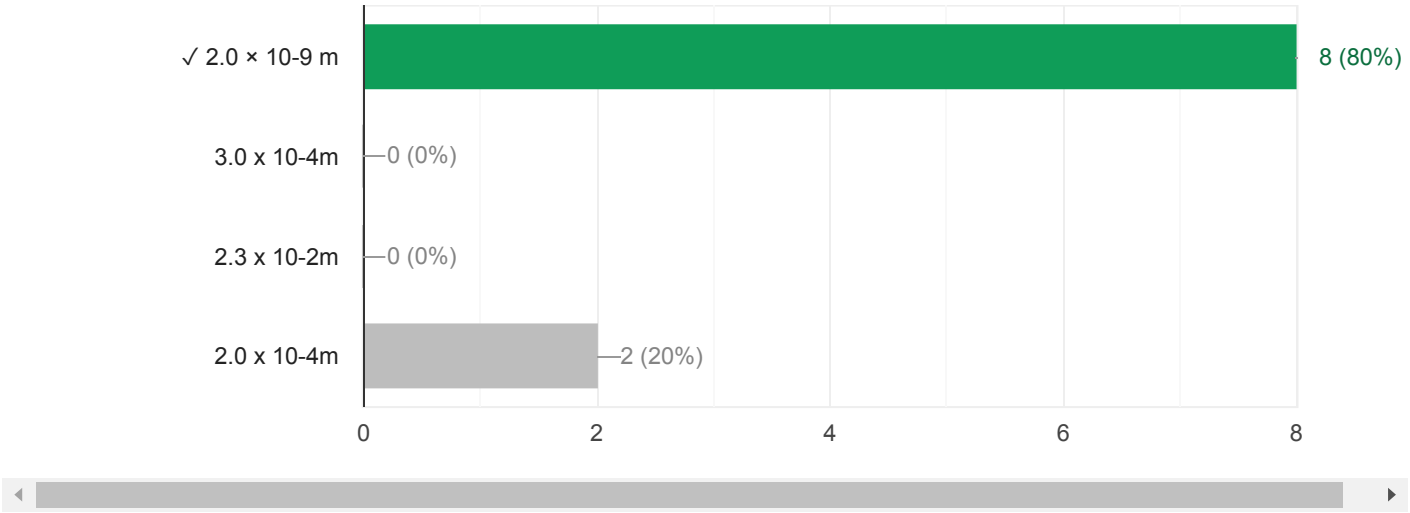
1. Give the reading in the following diagram.

10 responses



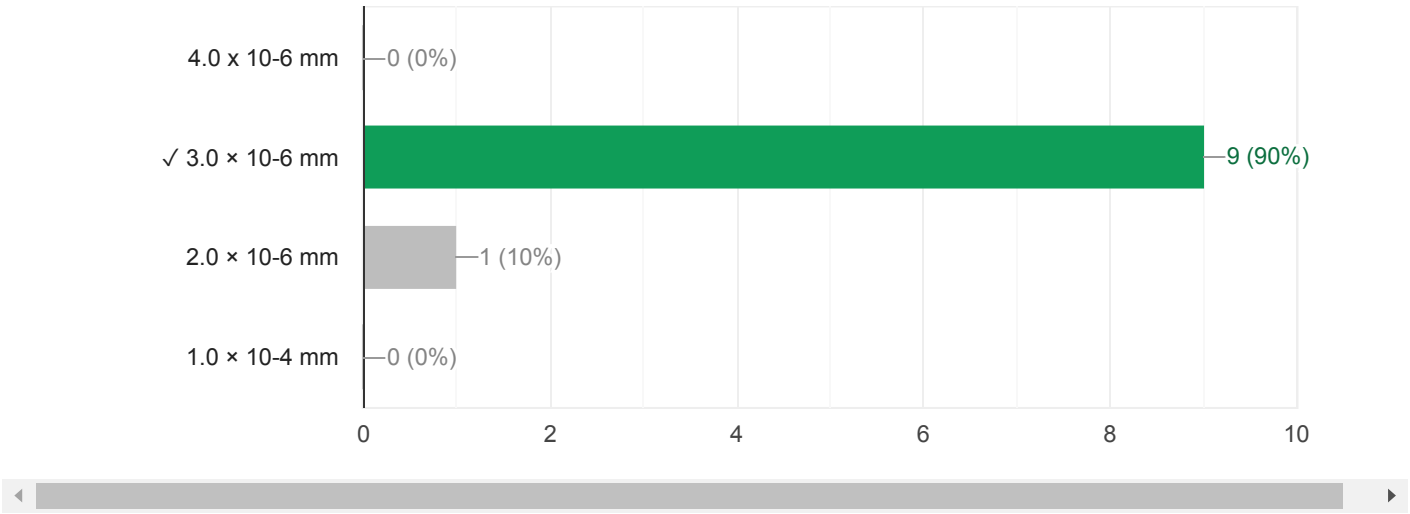
A drop of olive oil, whose volume is 0.12 mm3, was placed on a surface of clean water. The oil spread and formed a patch of area 6.0 × 104 mm2. Estimate the size of the olive oil.

8 / 10 correct responses



Suppose an oil drop has a volume of 0.10 mm3 and forms a film with a radius of 10 cm.Calculate, the thickness of the oil film.

9 / 10 correct responses



State The law of moments

10 responses

It states that for a system at a equilibrium the sum of clockwise moments about a point is equal to the sum of the anticlockwise moments about the same point

in a system at equilibrum the sum of clockwise moments are equal to sum of anticlockwise moments about the same pivot

States that for a system in equilibrium the sum of clockwise moments about a point must be equal to the sum of anticlockwise moments about the same point

Sum of clockwise moment is equal to sum of anticlockwise moment

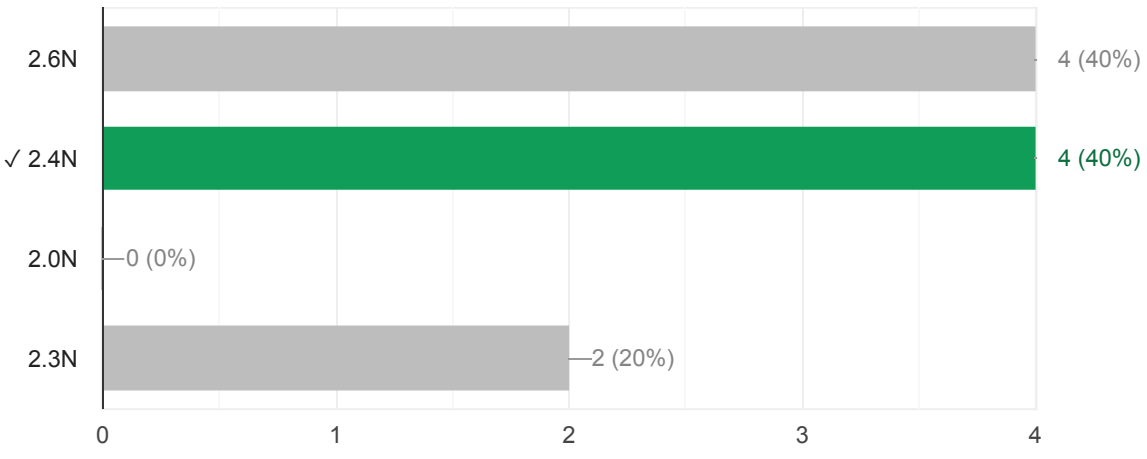
For a system at equilibrium the sum of clockwise moments at a point must be equal to the sum of anticlockwise moments at the same point

For a equilibrium system the sum of clock wise moments about a point must be equal to the sum of anticlockwise moments about the same point

When a system is at equilibrium the sum of clockwise moments about a point is equal to anticlockwise

. A uniform rod of length 1.0 m is hung from a spring balance as shown and balanced in horizontal position by a force of 1.6 N. Determine; a) The weight of the rod

4 / 10 correct responses



b) State three types of radiations emitted from a radioactive isotopes

10 responses

Hill foh

Gamma rays,Alpha particles and Beta particles

Radiator

G

Alpha radiation,Beta radiation, Gamma radiation

Carbin

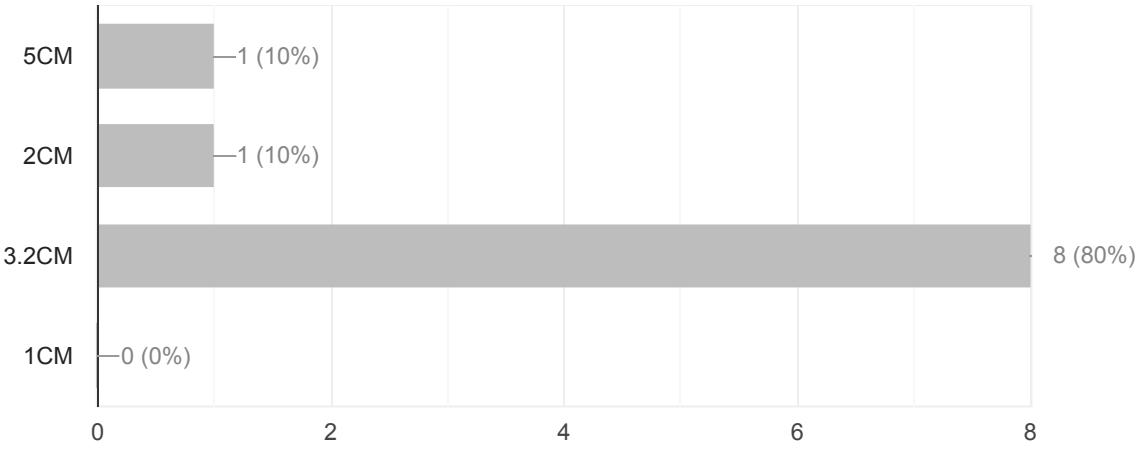
Alpha,beta,gamma

Alpha,beta ,gamma

Alfa rays,Beta rays,Galma rays

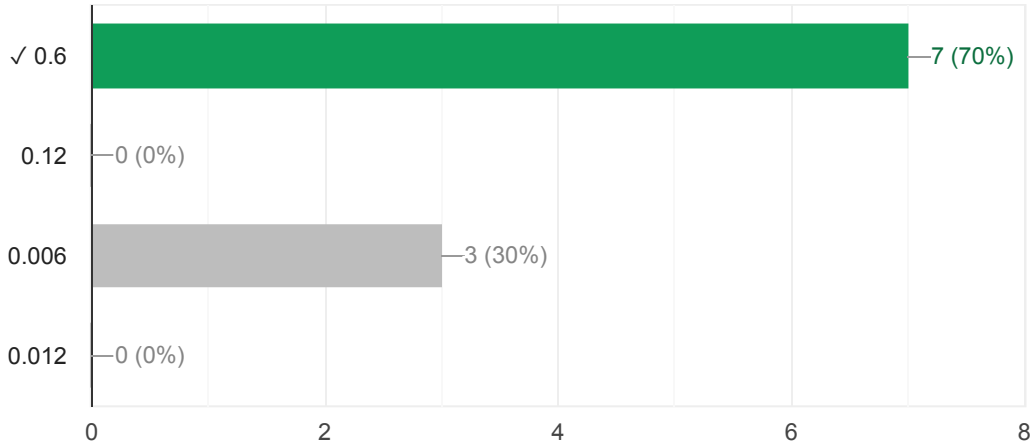
Determine the size, position and nature of the image of an object 5.0 cm tall, placed on the principal axis of a concave mirror of focal length 15 cm, at a distance 35 cm from the mirror.

0 / 10 correct responses



A vertical object 5 cm high is placed 10 cm in front of a convex mirror of focal length 15 cm. find the position, size and nature of image formed. Determine the magnification of the image.

7 / 10 correct responses



State ree Factors affecting the strength of an electromagnet

10 responses

The size of the current, shape of the core, length of the solenoid

The shape of the magnet,Number of coils,The strength of the electric current0.

Number of turns of wire in the solenoid,the length of the solenoid and the size of the current in the solenoid

Length of the solenoid Amount of current in the solenoid Number of turns on the solenoid

Number of turns of the wire on the electromagnet,Shape of the magnet,Size of the current

The size of the current.The shape of the core.The length of the solenoid

Length of the solenoid,number of coils,shape of the magnet

The current

.

state three factors affecting the magnitude of the Force on a current-carrying conductor in a magnetic field:

10 responses

Length of the conductor, amount of current, direction of the current

Resistance,the diameter of wire ,the distance

Size of current,the length of the conductor

Amount of current, pole

Length of the conductor, Angle between the current and the magnetic field,Size of the current

The size of the current in the solenoid.The shape of the core.The length of the solenoid

Resistance,amout of voltage

The nature of material,the length of the conductor,the strength of the current

.

If the springs shown below are similar and the constant of proportionality (k) is 100 Nm-1, determine total extension in each arrangement.

10 responses

200Nm

0.1m,0.2m,0.3m

3.0cm

10m,20m,25m

(a)0.1m,(b)0.15m,(c)0.4m

0.20

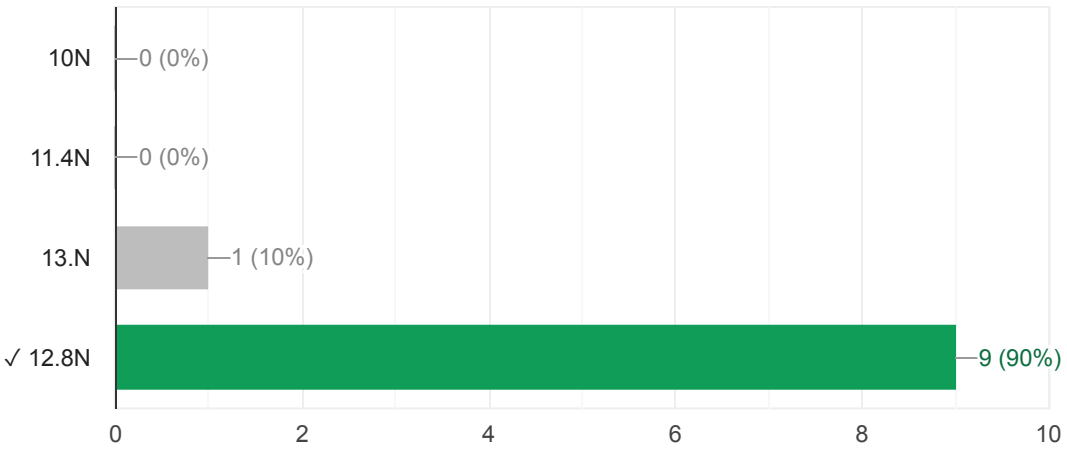
a)0.1 (b)0.067 (c)0.05

0.9m

a-0.1,b-0.15,c-0.2

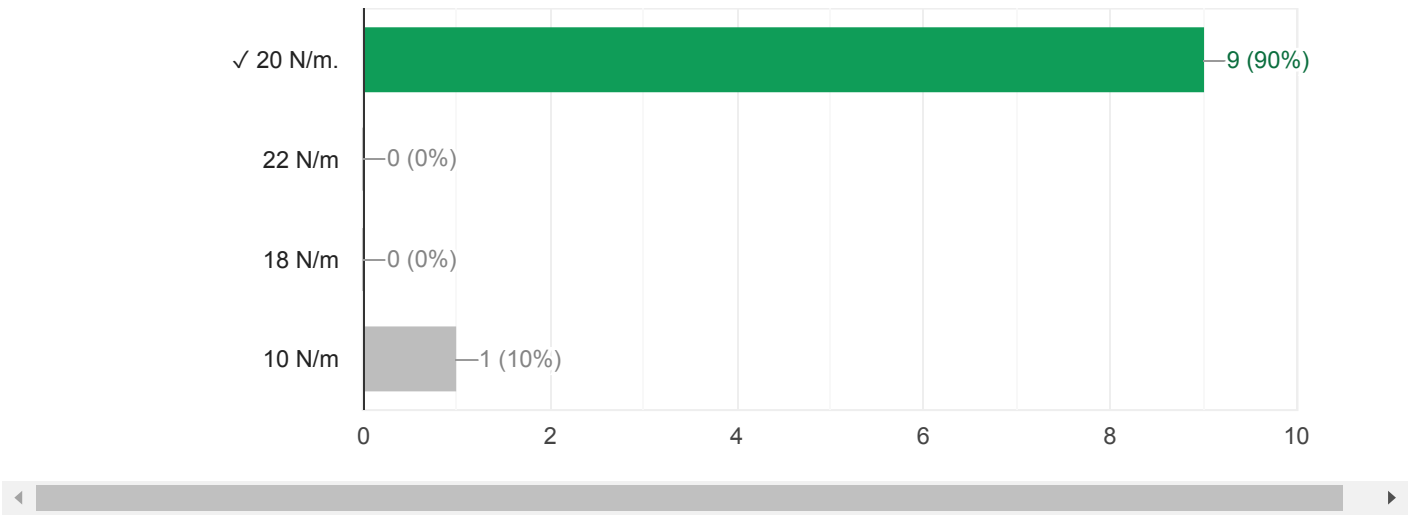
A load of 4 N causes a certain copper wire to extend by 1.0 mm. Find the load that will cause a 3.2 mm extension on the same wire. (Assume Hooke's law is obeyed). Solution

9 / 10 correct responses



A body of 200 g was hung from the lower end of a spring which obeys Hooke's law. Given that the spring extended by 100 mm, what is the spring constant for this spring?

9 / 10 correct responses



state three Characteristics of waves

10 responses

Amplitude, frequency, period

it has a wavelength,it has an amplitude,it has a period and frequency

Amplitude,frequency and period

It is a disturbance, it travels or propagates, it has methods of propulsion

Reflection, Refraction, Diffraction

Amplitude,frequency and wavelength

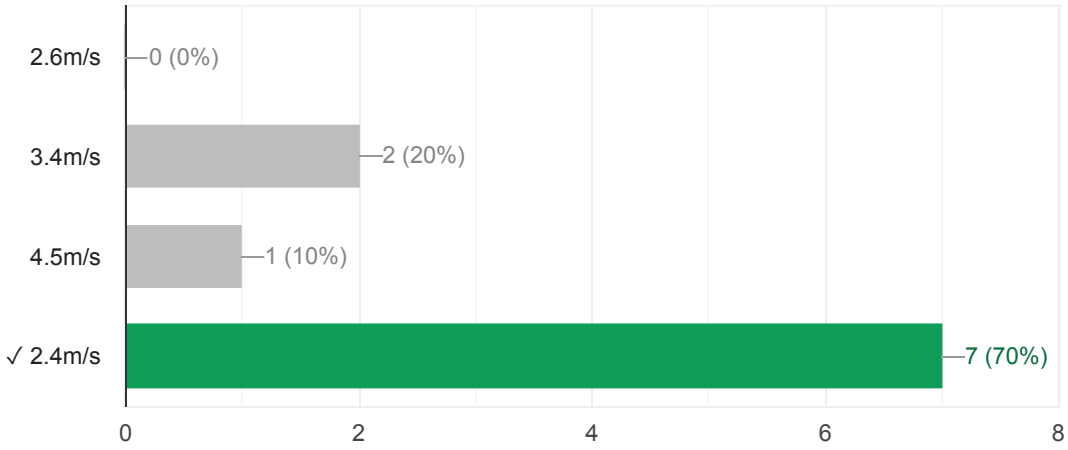
Polarisation,are characterised by troughs and crests,compressions and rarefactions

They follow the

.

A rope is displaced at a frequency of 3 Hz. If the distance between two successive crests of the wave train is 0.8 m, calculate the speed of the waves along the rope.

7 / 10 correct responses



state two Factors affecting the speed of sound

10 responses

Wind direction, temperature of air

Humidity,wind

Temperature of the air and wind direction

Temperature Humidity

Wind speed, Humidity of the air, Temperature of the air

Temperature and humidity

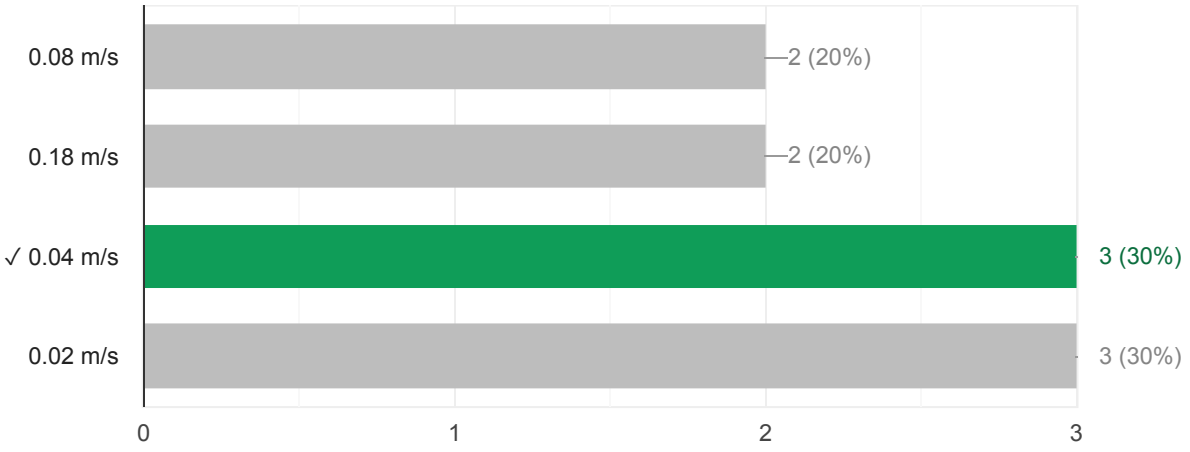
Humidity,wind direction

Density,depth

.

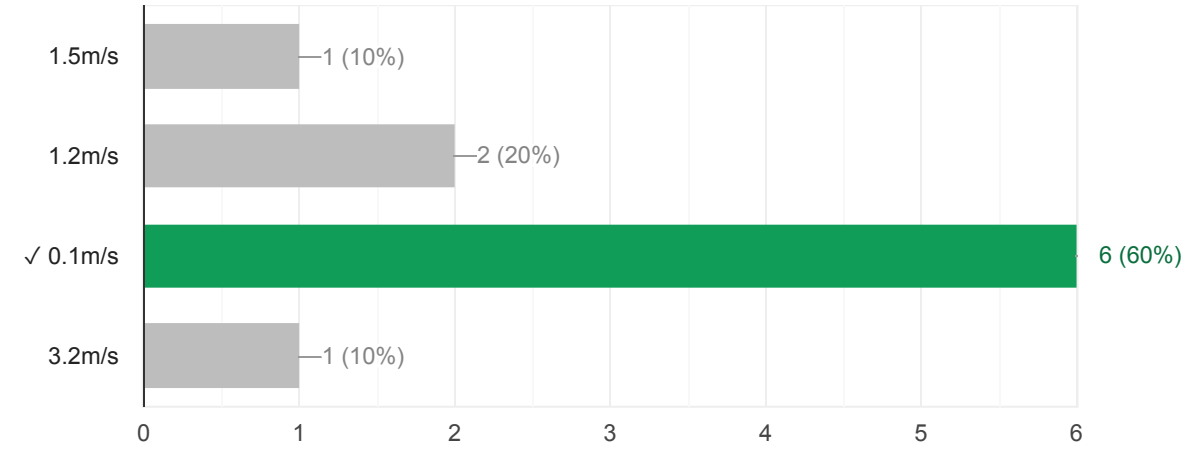
A horizontal pipe of cross-sectional area 50 cm2 carries water at the rate of 0.20 litres per second. Determine the speed; a) Of the speed of water in the pipe.

3 / 10 correct responses



b) When the tube narrows to 20 cm2 at another point

6 / 10 correct responses



state four Applications of Bernoulli's principle

10 responses

The aerofoil, bunsen burner, spray gun, the carburettor

in bunsen burner,in lifting airplane,in a carburator and in spraying guns

The aerofoil,Bunsen burner,spray gun and carburettor

High ways

Spray gun, Carburettor,Petrol engine,

Aerofoil, Bunsen burner,spray gun,the carburetor

Ink Spray gun,aerofoils,baseball,draft

Spinning ball , flying

.

ALL THE BEST

9 responses

Thanks

Thank you

thanks

Thanks

Thankyou