

END OF YEAR ASSESSMENT
S.3 PHYSICS
Paper one
2 hours. 15min

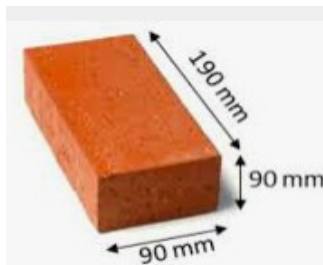
Instructions

Answer All questions in section A and 2 in Section B.

SECTION A

1. The table below contains some physical quantities commonly used in real life situations; complete the table using the right symbol, unit, and quantity.

QUANTITY	SYMBOL	UNIT	SYMBOL
Mass	m	kilogram	Kg
Length	l		m
		Seconds	
Electric current	I		
		Kelvin	K
Area			m ²
Density		Kilogram per cubic centimeter	
Pressure			Pa



2. Kasakya makes bricks to rise incomes that would support his family. If the dimensions of the bricks are shown, calculate the volume of a single brick Kasakya made in cm.

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b) Assuming that the mass of the dry brick is 150g, calculate the density of the brick

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c) Currently, the price for bricks on the Ugandan market, majority produced using traditional technologies, goes for an average of Shs 250. If Kasakya plans to sell 35000 bricks, how much money will he earn.

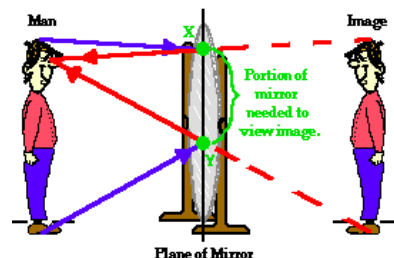
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3. A man was standing in front of the mirror as shown in the figure. State the properties of his image as observes him self

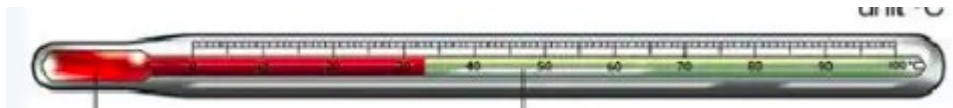
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what are the two laws that apply to this situation

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4.



consider the figure above:

a) Identify the instrument shown

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b) what are the possible liquids used in the instrument and why

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c) What does one need to know before calibrating the instrument above

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4. James and Peter were required to transfer bags of cement. Peter lifted 2 bags each weighing 50 kg and carried them through a distance of 4 metres. James carried one bag from the ground floor to the first floor using 150 stairs of height 0.02 metres each.

a) By calculation, of the two men who did more work

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b) If peter did his work in 3 minutes, and James in 1 minute. Who did work with more power. Show working.

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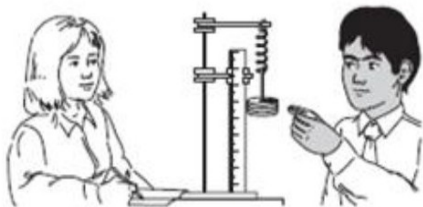
c) Advise peter and James separately on how they can simplify their work. Use the knowledge of machines. Clearly tell them the best machine each can use to have their work done using the least possible energy.

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6. Nduti and Kwefu carried out an experiment with springs. They put different masses, m on the spring and measured the length l of the spring each time.



b) Before loading the spring with masses, the length l_0 of the spring was 10 cm. The other results are in the table below.

Complete the table below and include the values of weight, w the extension, e with appropriate units

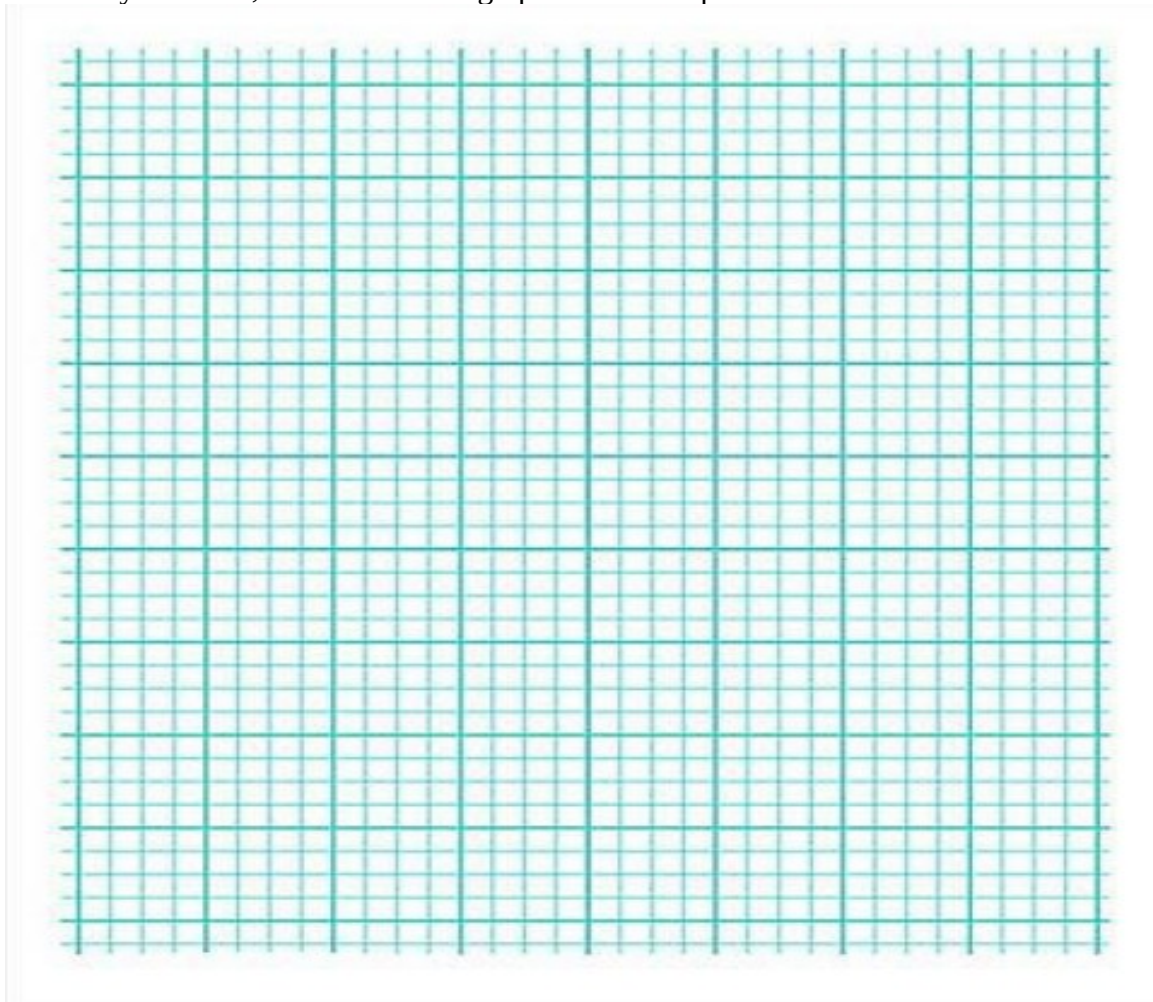
m (g)	l (cm)
200	14
400	18
600	22
800	26
1000	30

a) Which physics law are these classmates investigating ?

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c) With the results you added, draw a suitable graph for their experiment.



d) Write the best conclusion for this experiment from the graph drawn.

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7.



A skydiver falling through air under the influence of gravity. The two other forces acting on him are the and the force. The downward force of gravity remains constant regardless of the velocity at which the person is moving. However, as the person's velocity increases, until the magnitude of the sum of the and the force is equal to the gravitational force, thus producing a net force means that there is no acceleration, as shown by Newton's second law. At this point, the person's velocity remains constant and we say that the person has reached his

SECTION B (Attempt 2 questions)

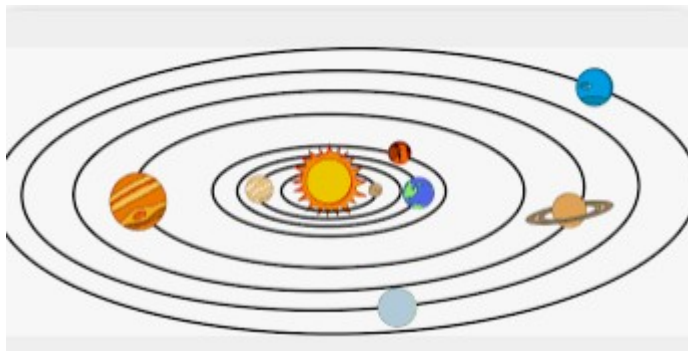
8.



Long ago in Uganda, people used hunting for survival and played football for fun. By providing specific examples and analyze how Newton's laws of motion, the concept of momentum, and collisions apply to the practical aspects of these activities, and what implications they have for the participants and their objectives?

9. Imagine you are at the edge of a swimming pool on a sunny day. You notice that when you look at the pool water from the side, objects at the bottom of the pool appear closer to the surface than they actually are. Explain this phenomenon using the concept of refraction and how it occurs when light passes from the air into the water. Use diagram above to explain why the swimming pool appear closer to the surface.

Additionally, discuss a real-life application of refraction in daily life where understanding this principle is important."



10. One of the most important components of our solar system is the sun. Another important component of our solar systems are the big masses called planets.

(a) Name all the planets found in our solar system.

(b) i. Identify the planet that sustains life in our solar system.

ii. How are the times and seasons of the year explained on the planet mentioned in(b)(i) above?

(c) Explain the statement that "the sun has a life cycle".

END