NA	MESTREAM:
'n.	END OF TERM I 2023
Š.	S.2 PHYSICS ASSESSMENT
	Time allowed: 1 hour 30 minutes
	Instruction: Answer all questions in this paper
	(a) Jerry has bought an irregular plot of land, he wishes to know the area of his plot of land, explain what jerry can do in order to determine area of his plot of land.  (4marks)
	(b) The Head teacher instructed the school Carpenter to make a notice board of dimensions 1.5m by 0.5m. If each notice is written on a Piece of dimensions 21cm by 30 cm, what is the maximum number of notices that can be put on the notice board at any one time.  (4marks)
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2.	그는 그는 그는 그는 그는 그는 그는 그는 그는 그를 가는 것이 되는 것이 되는 것이 없는 것이 없는 것이 없는 것이다.
	As a physics learner who have learnt about measurements, help Nathan to identify which measuring instruments, he can use to measure the above lengths accurately.  (2 marks)
	i) external diameter of water pipe:
	ii) length of the football pitch:
	iii) Diameter of the wire:
	iv) Height of his friend:

(b)	<ul> <li>Suggest a reason why it is not advisable to take only one measu diameter of a wire.</li> </ul>	mark)
(c)	A counter book of 384 pages is bound with sheets of paper,	each of
	thickness 0.2mm, and two hard covers of thickness 0.6mm.	What is the
	thickness of the book in meters?	(4marks)
	••••••	
(d)	A log of wood has more mass than a copper coin, but it does water. Explain why.	not sink in (2marks)
••••		
••••		
<b>3.</b> (a)	The figure below shows an electric heater being used to heat up v	vater in a cup.
	connecting lead	orberty 1.
	immersion	
	heating element heater	
	cup	
	water	
		• •
40		
(i)	With the heating element in the position shown above, the wa bottom remains cold even after sometime. Explain why this is	
	bottom romanis cora ever area semenare. Emplana with time to	(2marks)
(ii)	The heating element is now placed at the bottom of the cup. D	escribe how
	all the water in the cup is heated with the heating element in it	s new (3marks)
	position.	
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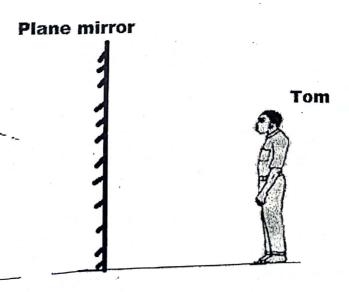
(iii)	Suggest a way to reduce heat loss to the surrounding by the hot v Explain your answer.	vater. (2marks)
(b)	It is common to unsuccessfully open a tight metal lid on a glass ja shown below:	
Usin with	ng the knowledge of expansion, explain briefly how you would open a ease.	Imark)
	The pictures in the figure below showing kids playing on a slide with neir father Mr. john. Study it and answer the questions that follow	
	Jovia Sarah Pater Mr.John	
(i)	Sarah is climbing the ladder. How do you think her potential is ch	anging?
		l mark)



(i)	Comment on the potential energies of Jovia and peter. (1n	ark)
(ii)	Calculate the Sarah's speed as she will be reaching the ground if she is	
	height of 340cm. (3 ma	
(b)	Mike has a mass of 58kg, and he is practicing gymnastics. He 6seconds to climb a flight of stairs of 36 steps. If each step is 12cm how much power is generated by Mike? Given that acceleration dugravity $g = 10m/s^2$ . (3ma)	takes nigh, ne to
	•••••••••••••••••••••••••••••••••••••••	
(a) T	Tom stood in front of a plane mirror as shown in the figure below.	
(i)	Draw a ray diagram to show how he may see his image in the mirror.	

5.

(2marks)



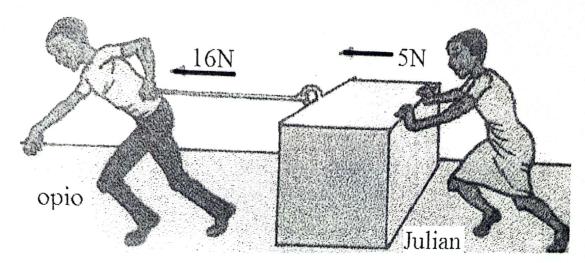
(ii) Identify the characteristics of image of Tom formed on the	ie mirror.
(3m	arks)
	•••••
	•••••
(b) The diagram below shows a patient having her eyes tested. A letters on it is placed behind her and she sees the chart reflected i mirror. The patient is told to move 0.5m away from the plane mirror.	in a plane
plane mirror patient and the image of the chart	Agranow?
What is the distance between the patient and the image of the cha	
	(3marks)
6. (a) Kinetic theory of matter state that 'matter consists of tiny invisible in the state of continuous random motion'. A teacher instructed S.2 st come up with every day examples demonstrating the existence of particle matter. Keith, a S.2 students presented his example before the whole classification was 'when someone closes him or herself in a dark room closed windows and doors, and looks into a ray of light penetrating one small hole in one piece of iron sheet, dust particles were seen moving again term' the teacher confirm Keith's findings  (i) explain why the dust particle are seen moving in a zig- zag pattern'	tudents to les in less. His n with a through oving in a

(ii)	State and explain what would be observed within the ray of light temperature of the room gets hotter.	(Zinar Na)
(b)	During a physics class activity, Madrine realised that it's easier to a balloon filled with air than ice cubes. Explain this phenomenon.	(2marks)
	John's car has a mass of 2.6 tonnes. What is the weight of his car	
(c)		(2marks)
(a) A	gnes was driving under a light drizzle along Naalya – Namugongo r rider (boda- boda), suddenly skidded off the road in front of Agn s immediately applied her brakes but it was a useless move. There ent but fortunately enough, no one sustained injuries.	road, a es's car. was an
(i)	What was the problem between the tyre of Agnes's car and the surface?	road (1mark)
-		
(ii)	Considering the above scenario, how is friction useful.	(3marks)

7.

(c). Opio is pulling a box using a rope while Julian is pushing using the box as shown below.

: 4 2 0 % p 2



If Opio is exerting 16N and Julian is exerting 5N. Find the value of frictional force experienced between the box and the ground, if the resultant force is 14N.

(3marks)

**END**