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GATITU SECONDARY SCHOOL P.O BOX 327-01030 GATUNDU

FORM 2 END OF TERM 1 MATHEMATICS EXAM 2015

TIME 2 ½ HRS

NAME.....ADM.....

INSTRUCTIONS

ANSWER ALL the questions in section A and any five in section B.

Show your workings below each question.

1 Work out $\dfrac{\frac{1}{4} \text{ of } 2 + 3\frac{3}{4} \div 3/8 - 4\frac{1}{2} \times 3\ 1/3}{2\ 4/5 \times 1\ 3/7 - 4 \div 2/3 + 3/5 \text{ Of } 15}$ (4mks)

2 Convert to a fraction $0.\dot{2}\dot{1}\dot{3}$ (3mks)

3 Find the L C M and G C D of 24, 36 and 50 (3mks)

4 Kamau spent 2/5 of his salary on food and 3/8 on paying school fees for his children. If he remained with ksh 12,300, find the amount he spent on food. (4mks)

5 It takes 30 workers 6 days working 8 hours a day to harvest maize in a farm. How many days would 50 workers working 6 hours a day take to harvest the maize. (3mks)

6 A Kenyan businessman bought goods from Japan worth 5,900,000 Japanese yen. On arrival in Kenya, a custom duty of 20% was charged on the value of goods. The exchange rates were as follows;

1 US$ = 118 Japanese yen

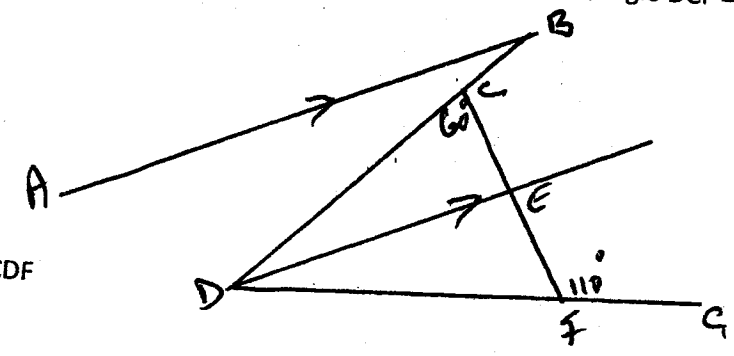
1US$ =76 Kenyan shillings

Calculate the duty in Kenyan shillings (3mks)

7 Solve the equation $\frac{x-2}{3} - \frac{3-x}{4} = \frac{x-2}{2}$ (3mks)

8 If a =3 ,b =4 and c =1.5 find $\frac{\sqrt{ba^2}}{1.5}$ (3mks)

9 In the figure below, AB is parallel to DE, DE bisects angle BDG ,angle DCF =60^0 ,and CFG =110^0



Find (a) angle CDF (2mks)

(b) Angle ABD

(2mks)

10 Use mathematical tables to evaluate

$2.341^2 + \sqrt{549}$ (3mks)

11The area of a sector of a circle radius 3cm is $22cm^2$. If the sector subtends an angle of Q0 at the center of the circle, calculate the value of Q (π=22/7)

(3mks)

12 Find the ratio p : r if p :a = 1: 2, a :b =2: 3, b: c = 5: 1, c:r =3 :2

(3mks)

13 Write the largest 6 digit number that can be formed using symbols 4,0,2,8,3,5 (2mks)

14 Solve the simultaneous equation ; (4mks)

$1/U - 1/V = 1/8$

$1/U + 1/V = 3/8$

15 Use factors to evaluate $\sqrt[3]{\frac{0.064 \times 125}{347}}$ (4mks)

SECTION B ANSWER **ANY 5** (50MKS)

16 A trader bought 5 exercise books and 7 pens at a total cost of ksh 170 from a shop. On the same day he decided to buy 13 exercise books and 4 pens at a total cost of ksh 300.
Taking the cost of one exercise book be ksh X and that of a pen sh y .Form two equations in x and y.(1mk)

(b) Determine the cost of one exercise book and the cost of one pen. (3mks)

(c)The trader sold all the pens at ksh 165 to a shopkeeper. Calculate the percentage profit that the trader made.

(3mks)

(d) If the trader sold all the exercise books generating a loss of 20%, determine the amount the trader got after selling all the exercise books.

(3mks)

17The relation between speed and time is given by the formula $V = 4t + 5$.
The table below gives some values of V and t.

t	0	1	2	3	4	5	6
V	5	9	13				

(a)Complete the table

(2mks)

(b) Draw a graph of V against t

(3mks)

(c) use your graph to find;

(i) V when t =2.5

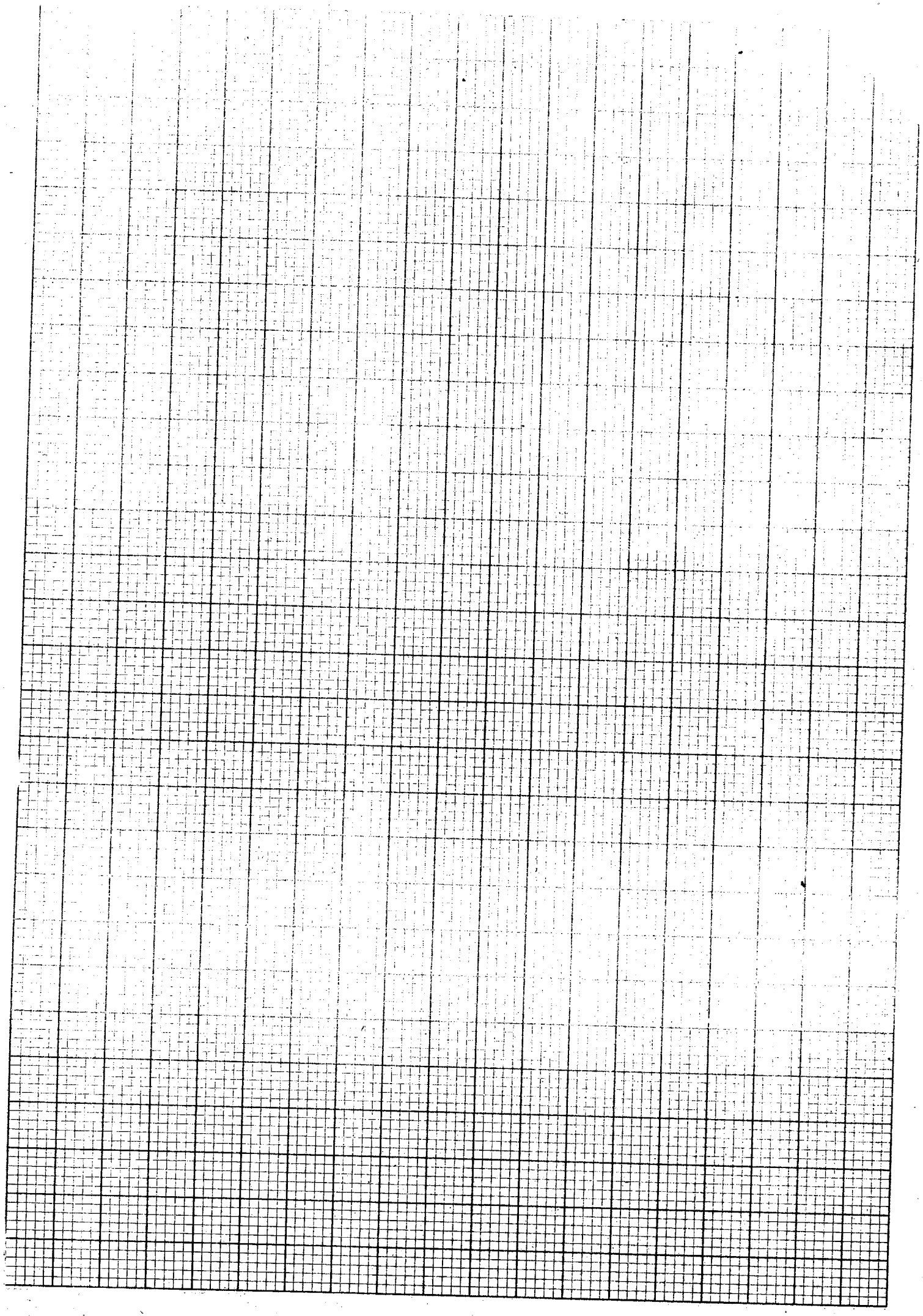
(ii) V when t =4.5

(iii) T when V =10

(iv) T when V =15

(v) V when t =0

(1 mk each)



18Three ships A, B and C are such that the bearing of B and C from A is 060^0 and 030^0 respectively. An island T is due West of C and due North of A. It is further given that BC = CA = 30 km.
Make a scale drawing to show the relative positions of the three ships and the island using a scale of 1cm to represent 5 km. (4mks)

Hence find;

(a) The distance between A and B (2mks)

(b) The bearing of the island T from A (1mk)

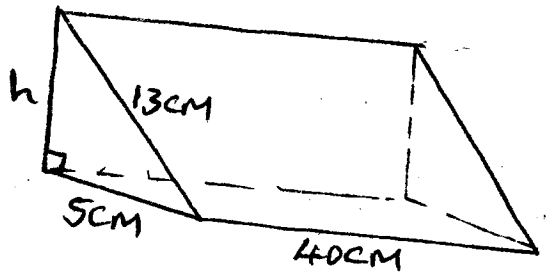
(c) The distance between C and the island T (1mk)

(d) The bearing of B from C (1mk)

(e) The distance between the island T and A

(1mk)

19 The figure below shows a solid prism whose cross-section is a right-angled triangle.



(i) Calculate the length of h.

(1mk)

(ii) Determine the surface area of the prism

(4mks)

(iii) Calculate the volume of the prism in m^3

(3mks)

(iv) If the density of the material used in making the prism is $850kg/m^3$,calculate the mass of the prism (2mks)

(e) The distance between the island T and A

(1mk)

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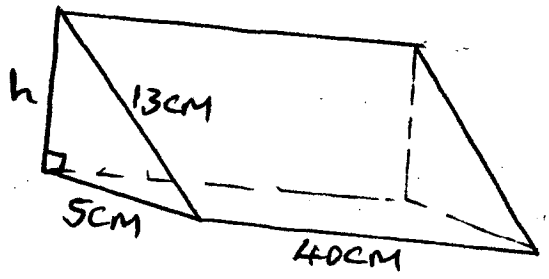

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Hence find;

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(b) The bearing of the island T from A (1mk)

(c) The distance between C and the island T (1mk)

(d) The bearing of B from C (1mk)

21 Measurements of a coffee plantation base line **X Y** were recorded as shown below

	Y	
	240	
To R 60	190	
	180	70 To Q
	150	50 To P
To S 100	120	
	100	100 To N
To T 30	50	
	20	20 To M
	X	

Use a suitable scale to draw the map of the plantation (6mks)

(i) Calculate its area in hectares (4mks)