

**GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.**  
**FORM 1 MATHEMATICS. END OF TERM 3 EXAMINATION. 2014.**

**NAME:** \_\_\_\_\_ **ADM:** \_\_\_\_\_ **CLASS:** \_\_\_\_\_

TIME: 2<sup>1</sup>/<sub>2</sub> HRS

**INSTRUCTIONS.**

1. Write your name, adm. No. and Class in the spaces provided above.
2. All questions and working **MUST** be written on the question paper in the spaces provided below each question.
3. Show all the steps in your calculations giving your answers at each stage in the spaces below each question.
4. Marks may be given for correct working even if the answer is wrong.
5. Mathematical tables may be used, except where stated other wise.

1(a) Three bells ring at intervals of <sup>9</sup> minutes, 15 minutes and 21 minutes. The bells will next ring together at 11.00 p.m. Find the time the bells had rang together. (3mks)

b) Find the greatest number which when divided into 180 and 2 35 will leave remainder of 4. (2mks)

2a) Evaluate each of the following

(3mks

i)  $12 + 6 \frac{1}{2} - 34$

ii)  $96 \frac{1}{2} + 7 \times 15 - 14 \times 5$

(4mks

b) A man was born in 1966. His father was born in 1928 and the mother three years later. If the man's daughter was born in 1992 and the son 5 years earlier. Find the differences between age of the man's mother and that of his son.

(4mks

3a) Evaluate

$$\frac{1 \frac{1}{5} - 1 \frac{1}{3}}{1/8 - (-1/2)^2} - \frac{7}{5} \text{ of } 2$$

(4mks

b)  $(2\frac{1}{5} - 2\frac{1}{4}) - \frac{3\frac{1}{2} - 2\frac{1}{4}}{\frac{5}{8}}$  (4mks)

4a) Express  $0.\overset{\bullet}{2}\overset{\bullet}{7}$  as a fraction. (3mks)

b) The product of two numbers is 1.3403. If one of the numbers is 0.13 find the other number. (3mks)

5. By expressing the numbers below in the form  $A \times 10^n$ , where A is a number between 1 and 10. And  $n$  is an integer, find the squares of the following numbers.

a) 893 689 (2mks)

b) 41 (2mks)

c. If  $x=3$ ,  $y=2$  and  $Z=7$ , Calculate answer correct to 3 significant figures.

$$\sqrt{\left(\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{Z^2}\right)}$$

giving your (3mks)

6. The ratio of the adjacent sides of a rectangle is 4:5. Find the dimensions of the rectangle if its length is  $X + 1$  cm and the width is  $(x - 3)$ cm (3mks)

b) Hence determine the ratio of the area of the rectangle to its perimeter. (2mks)

7. The length of each side of a square is increased by 15%. Calculate the percentage increase in its area. (3mks)

b) There is a 25% loss when an article is sold at shs. 200. At what price should it be sold in order to make a profit of 5%. (3mks)

8. The table below shows the amount of money charged for hiring a car for a given distance.

Distance covered (km)	10	20	30	40	50
Charges (sh)	75	100	125	150	175

a) Using a graph paper attached: Draw a graph of the charges against the distance covered. (3mks)

b) Use your graph to find

i) the standing charge (1mk)

ii) How much money is charged for covering a distance of:

- 28 km (1mk)
- 33 km (1mk)
- 42 km (1mk)

iii) the distance covered if the following amounts are charged

- Shs. 131.00 (1mk)
- Shs 140.00 (1mk)
- Shs 190.00 (1mk)

9 Use elimination method to solve the following pairs of simultaneous equation.

i)  $2m + n = 7$  (3mks)  
 $3m - 2n = 10$

ii)  $\frac{x+y}{3} - \frac{x-y}{4} = \frac{2}{3}$  (4mks)

$$\frac{2x-3}{3} - \frac{2y+3}{4} = \frac{19}{12}$$

b) Use substitution method to solve the following

(3mks)

$$2p + 7q = -19$$

$$\frac{1}{2}p - 3q = 7$$

10. A tourist arrived in the country with US dollars 2000: which he changed into Kenya shillings. He spent ksh 75,000 on hotel accommodation and ksh 40,000 on travel and other expenses. He changed the remaining money into sterling pounds. If he did all his money transactions at the Barclays Bank whose rates are as shown below.

Buying

Selling

Currency:

Ksh

Ksh

US dollar

78.45

78.95

Sterling pound

120.27

121.04

a. How much money in sterling pound ( £ )

did he remain with.

(5mks)

11. Solve graphically the simultaneous equations

(5mks)

$$X - 2y = 1$$

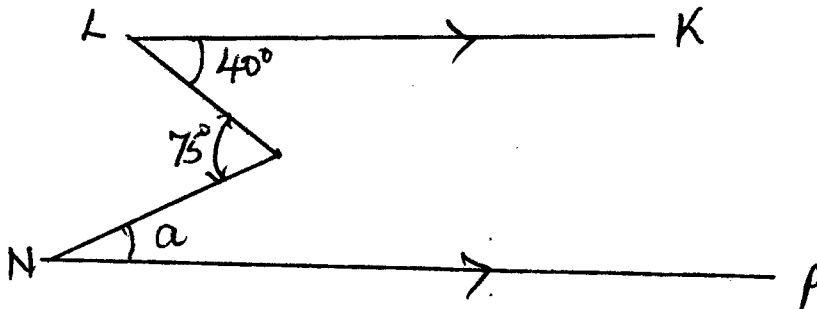
$$2X - y = 4$$

Use the graph paper provided in Q. 8

12. A motorist made a journey of 152 km in a total time of  $3\frac{1}{2}$  hrs. He went part of the journey at an average speed of 40km/h and for the rest of the journey he averaged 48 km/hr. How far did he travel at 40 km/hr? (4mks)

13a) Find the angles marked by letters in the figure below.

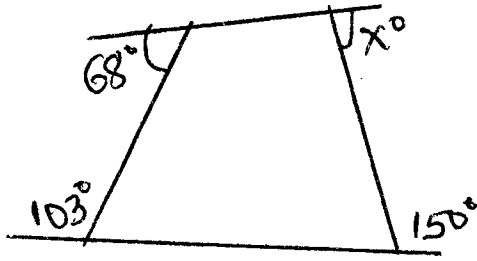
(2mks)





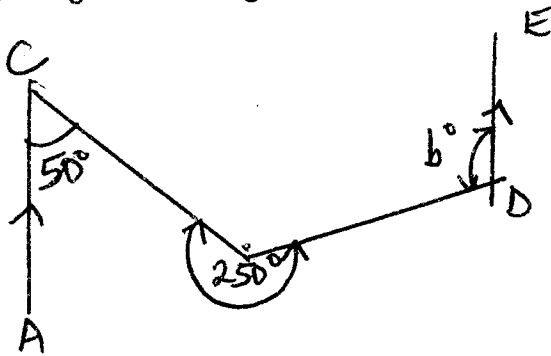
b) Find X in the figure below

(3mks)



c) Find angle b in the figure below.

(3mks)



14a) A tank containing water has a hole, so that  $16\text{cm}^3$  of water leaks out every 5 seconds. Calculate the quantity of water lost from the tank every hour. (3mks)

b) The water which leaks out is collected in a cylinder of radius 35cm and height 80cm. Calculate how many hours it takes to fill the cylinder. (3mks)

15. 3 combine harvesters can harvest a farm in 9 days. If used for 8 hours a day. How many days would 2 of them take if used for 10 hours a day. (3mks)

b) Kasime has a money box containing 100 mixed shs. 5 and shs 10 coins with a total value of sh. 600. How many of each type of coin does the box contains. (3mks)