NAME ------------------------------------------ CLASS ------------------------------- ADM NO ---------------

GATITU MIXED SECONDARY SCHOOL

MATHEMATICS FORM 2 3RD TERM 2013

TIME : 2 ½ HRS

SECTION 1 (50MKS )

ANSWER ALL THE QUESTIONS IN THIS SECTION

1. Use logarithms to evaluate 4MKS

* 3 0.45322 × 0.8925
  + 1.704

1. Solve for X in the equation

4X+1 × 1/32 2 –X  = 16 X -1/2 3MKS

1. Given that the ratio a:b = 2:3, find the ratio (5a -2b): (a +b) 2mks
2. In a national park the number of gazelles is twice the number of zebras, while the number of zebras is less than the number of wild beast by 100, if the information is represented on a pie chart the combined angle of the gazelles and wild beast will be 300. Find the number of gazelles, zebras and wild beasts in the park. 3mks
3. A straight line S has equation 4y -3x -6 =0. This line is perpendicular another line T, that passes though (3,5) find the equation of line T. 3mks
4. At a point 20m from the foot of a tree, the angle of elevation of the top of the tree is 50, what will be the angle of elevation of the top of the tree from a point 30 m away from the tree? 4mks
5. Write the order of rotational symmetry and draw the lines of symmetry on the diagram below. 2mks
6. Solve the inequality 2x -3< X < 2x + 5 and give the integral values of X . 3mks
7. A cylindrical glass has radius 3 cm and a height 7c m. A large cylindrical jar full of water is similar shape to glass. The glass can be filled with water from the jar exactly 216 times. Determine the radius and the height of the jar. 3mks
8. Three men working for 8 hrs per day take three days to dig a trench 9 m long. How long would it take five men working 4 hrs a day to dig 45m long. 2mks
9. In the diagram below triangle A is mapped on to triangle B by a certain transformation

Define the transformation fully 3mks

1. A bus takes 195 minutes to travel a distance of (2x +30) km at an average speed of ( x – 20) km h-1. Calculate the actual distance covered and give your answer in km. 4mks
2. Simplify

2/5 of 1 2/3 -1/2

1. Factorise the expression 2x2 – 3x -5 hence solve the quadratic equation 2x2 -3x -5 =0 4mks
2. Use reciprocals tables to evaluate x in 1/x = 1/14.64 + 1/ 873 4mks
3. The sum of interior angles of an n – sided regular polygon is 720. Find the value of n and hence deduce the name of the polgon 3mks
4. Two towns , A and B are 80km apart. Juma started cycling from town A and B at 10.00 am at an average speed of 40km/h. mutuku started his journey from town B to town A at 10.30 am and travelled by car at an average speed of 60km/h.
5. Calculate
6. The distance from town A when Juma and matuku met; 5mks
7. The time of the day when the two met. 2mks
8. Kamau started cycling from A to town B at 10.21 am. He met mutuku at the same time as juma did. Determine kamau’s average speed. 3mks
9. Draw a triangle ABC with coordinates A(-2,3), B(-2,-6) and (-6,-6)
10. Draw the triangle A1B1C1 the image of triangle ABC under a rotation of -90 about the origin. Write down its coordinates of A1B1C1 3mks
11. Draw the A2B2C2 the image of A1B1C1 under a reflection on the line y=x, write down its coordinates of A2B2C2. 3mks
12. Identify one of the transformation which transforms ABC onto A2B2C2. 1mk

1. In the figure below PQ =p and PR =r,
2. Write the vector QR in terms of p and r only. 1mk
3. S and T are the mid of QR respectively. By expressing ST in terms of p and r only, prove that PR is parallel to ST using vector method 4mks
4. The u shaded region is given by three inequalities . find the other other two given that one is y ≥ 0
5. An artisan makes a cooking pot made of a hemispherical and conical as shown below
6. Calculate the total surface area of the cooking pot. 6mks
7. Calculate the volume of the pot. 4mks
8. A sales man is paid a commission of 5% on goods worth over sh. 500,000. He is also paid a monthly salary of kshs 30,000.
9. Calculate the total earnings in a month when his total sales was ksh. 600,000. 3mks
10. In the following month the rate of commission was changed to x% but his monthly salary remained the same. If the salesman received a total monthly earning of sh. 40,000 for selling goods worth the same amount. Find the value of x. 3mks
11. If the rate of commission in (b) above was reduced by 15% and his monthly salary increased by 10% . find the percentage change in his total monthly earnings for selling the same amount for goods. 4mks
12. The figures below show the weight in kg of 30 people living near a town.

60 83 57 46 80 32 108 78 75 36

55 45 53 41 61 48 93 42 58 38

50 58 51 63 77 74 49 66 66 60

1. Make a frequency distribution table taking groups 30 -39 , 40 -49 etc. 2mks
2. State the modal class 1mk
3. Calculate the mean 3mks
4. Median 3mks
6. Solve the equation,

X +3 = 1

24 x -2 4mks

1. The length of a floor of a rectangular hall is 9 m more than its width. The area of the floor is 136m2.
2. Calculate the perimeter of the floor 4mks
3. A rectangukar carpet is placed on the floor of the hall leaving an area of 64 m2. If the length of the carpet is twice its width, determine the width of the carpet. 2mks