

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

GATITU MIXED SECONDARY SCHOOL

MATHEMATICS FORM 1 E3RD TERM EXAM

SECTION A(50MKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION

1. Evaluate

3mks

$$\left(\frac{(2\frac{1}{4} + 1\frac{1}{2}) \times 24/11}{4/3 \text{ Of } (2\frac{3}{4} - 5\frac{1}{2})} \right)$$

2. The ratio of teachers: Male students in a school are 2: 17:18. the total number of students is 665. Determine the Teachers: student ratio

3mks

3. solve for x in the equation

3mks

$$\frac{2X + 1}{3} - \frac{X + 1}{2} = 9$$

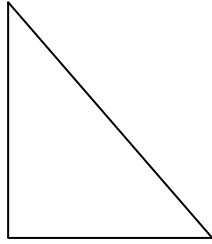
4. The sum of interior angles of a regular polygon is 1440. Determine the number of sides and hence give the name of the polygon. 4mks

5. A shopkeeper marked a radiogram for sale at sh. 3600 so that he can make a profit of 20% on the cost price. During the actual sale, he allowed a discount of 5% off the market price. Calculate the actual percentage profit. 4mks

6. Evaluate 2mks
- $$\frac{12 \div (3) \times 4 - 20}{-6 \times 6 \div 3 + 6}$$

7. The middle angle of a triangle exceeds the smaller angle by 20. If the largest angle is twice the middle angle, determine the size of the largest angle. 4mks

8. An electric pole is supported to stand vertically on a level ground by a tight wire. The wire is pegged at a distance of 6 m from the foot of the pole as shown below. The angle the wire makes with the ground is 3 times the angle it makes with the pole. Determine the length of the wire. 4mks



9. The diagram below shows a sketch diagram of a piece of land. All the measurements are in metres and AF is the base line. 3mks

Enter the information on a field note book.

10. Evaluate without using mathematical tables or a calculator.

3mks

$$\sqrt{384.16 \times 0.625}$$

$$96.04$$

11. Four runners can complete one lap in a time of 10 minutes, 15 minutes, 30 minutes and 40 minutes. If they start at 4.00pm, find the time that elapses before they are all at the start line together.

2mks

12. factorise completely $42mc + 36md - 7n^2c - 6n^2d$

2mks

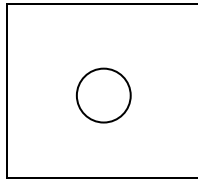
13.

a) Arrange the prime numbers from one to ten in descending order.

1mk

- b) Four is added to the number formed in (a), test whether the resultant number is divisible by 11. 2mks

14. A iron bolt is made a cube of side 2 cm and hole of a diameter 1 cm. the cross section of the bolt is as shown below.



Calculate the volume of iron

15. A two digit number is such that four times the sum of its digits exceeds the by 3. The numbering is increased by 27 when its digits are reversed. Find the number. 4mks

16. Find the number three men working 8 hours daily can complete a piece of work in 5 days. Find how long it will take 10 men working 6 hrs a day to complete the same work. 2mks

SECTION B (50MKS)

ANSWER ANY FIVE QUESTIONS FROM THIS SECTION

17. A factory produces food for chicken farmers using sunflower seed, millet and maize.
- a. The amount of sunflower seeds: millet: maize are in the ratio 5:3:1. A farmer bought and amount of chicken food that had sunflower seeds of 60 kg. determine the total amount of food he bought. 3mks
- b. If the cost of sunflower seed is kshs.20410 per 30 kg, determine how much the farmer spent in buying the quantity in part (a) above.4mks
- c. Bags are filled at the rate of 480g per second, at 12kg per bag, how much time did it take the factory to manufacture the food for the farmer. 3mks
- 18.
- a. A theatre sells 319 tickets collecting kshs 378,400 for a show. There are two types of tickets on sale, ksh 1,000 or kshs 1,600. Determine the number of each type of ticket sold. 3mks

- b. Tourist arrives in Nairobi with UK 1000 which he exchanged for Kenya shillings. During his stay in Kenya, he spent kshs, 90440 and on his departure he exchanges the remaining Kenya shillings in uk. During his arrival and duration of his stay the exchange rates were as follows. Buying uk = 133.90 kshs. Selling uk =138kshs. How much money did he leave with in uk.

3mks

- c. Two grades of coffee costing kshs.90 and kshs. 150 per kg respectively are mixed in the ratio 3: 5 by weight. The mixture is then sold at kshs. 160. Find the percentage profit in the mixture.

4mks

19. A room measuring 5.8 m long, 4.2 m wide 2.5m high is to be painted on all walls, the floor and the ceiling. The room has one door measuring 1.8 m by three windows measuring 1.2m by 75cm each

- a. Calculate to 2 decimal place:

i. The area of the floor and the ceiling 2mks

ii. The area of the walls except the door and the windows. 4mks

iii. The area to be painted. 2mks

- b. Painting costs kshs. 100 per square meter. Find the cost of painting two such rooms .
2mks

20. A port B is on a bearing of 080 from a port A and at a distance of 95km, a submarine is stationed at port D which is on a bearing of 200 from A and a distance of 124km from B and moves directly southwards to an island P which is on a bearing of 140 from A . the submarine at D on realizing that the ship was headed for island P decided to head for island P to intercept the ship. Draw a scale drawing showing the relative position of A,B,D and P. use your diagram to find:

- a. The distance from A and D
- b. The bearing of the submarine from the ship was setting off from B
- c. The bearing of island P and D

d. The distance the submarine had to cover to reach island P.

21. A school principal has to buy a number of computers and a number of computer tables at kshs. 15,500 per computer and kshs 2,400 per computer table spending a total of kshs. 43,000. If he had bought half as many computers and twice as many computer tables would have saved kshs. 3,500. He sold all the computers tables to the student's computer association at a profit of 30% per computer and 40% per computer table so as to generate some money for a school bus project.

a. Determine the number of computers and the number tables he had bought by graphing.

5mks

b. The percentage profit he made on the computers and the computer table, giving your answer to one decimal places.

2mks

- c. The school had raised 80% of the cost of the bus in a fundraiser. An old boy of the school offered to pay the remaining 20% while the computer sale goes to registration of the bus. If the old boy's contribution was KShs. 1,200,000, what is the total cost of the bus? 3mks

22. Use a ruler and a pair of compasses only for all constructions in this question

- a. Construct triangle ABC, such that $\angle BAC = 75^\circ$, $AC = 7$ cm and $AB = 8$ cm. 3mks

- b. Construct two angle bisectors $\angle ACB$ and $\angle ABC$ and let the bisectors meet at X. 2mks

- c. Construct a perpendicular from X to the line AB at point E. Measure XE. 2 mks

- d. Using X as the centre and XE as a radius draw a circle touching the side of the triangle. Calculate the area of the circle. 3mks

23.

- a. in the figure below the largest possible circle is drawn inside a semi circle as shown.
calculate the area and circumference of the shaded . 4mks
- b. The table below shows opening and closing times for a fast food restaurant in a town.
- c. 1080 cm^3 of dough is rolled out to form a cuboid of dimensions $20 \text{ cm} \times 30 \text{ cm} \times 1.8 \text{ cm}$. a restaurant chef cuts out circular pancakes of diameter