

GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.
FORM 2 MATHEMATICS. END OF TERM 3 EXAMINATION. 2014.

Answer all questions.

1. Evaluate:

$$-\frac{2}{3} - \left(+ \frac{1}{10} \right) + \left(+ \frac{1}{7} \right) \quad (3\text{mk})$$

$$2. \left(\frac{5 \times 2}{7 \cdot 3} \right) + \left(\frac{5}{6} - \frac{8}{9} \right) \div \frac{7}{15} \text{ of } \frac{5}{6} \quad (4\text{mks})$$

3. Three boys shared some money. The youngest got $\frac{1}{12}$ of it, the next got $\frac{1}{9}$, and the eldest got the remainder. What fraction of the money did the eldest receive? If the eldest got sh 330, what was the original sum of money? (4mks)

4. Express each of the following as a fraction

i) $0.\dot{6}7$

(2mks)

ii) $3.\dot{5}2\dot{3}$

(3mks)

5. The product of two numbers is 119. If one of the numbers is 4.25. What is the other number. (2mks)

6. Four men can till a piece of land in six days. How long would it take two men to till the same piece of land? (3mks)

7. The price of an article was raised by 20% and week later the new price was lowered by 20%. What was the new price if the original price was sh 50? (3mks)

8. A bicycle wheel turns 15 times to cover 66 cm. Find the radius of the wheel. (3mks)

9. A school water tank tank has a radius of 2.1m and a height of 450cm. How many litres of water does it carry when full. (5mks)

b) If the school uses 5000 litres of water a day, approximately how many days will the full tank last. (3mks)

10. Calculate the volume of 1.5kg cork if the density of cork is 0.25g/cm^3 (3mks)

11. 1.5 litres of water (density 1g/cm^3) is added to 5 litres of alcohol (density 0.8g/cm^3) calculate the density of the mixture. (4mks)

12. Musa spent sh. 207 to buy seven books and four pens, while allan spent sh 165 to buy five exercise books and five pens of the same type. Find the cost of each item. 4mks

13. From town p, a hill Q is 5km on a bearing 078° and a railway station R is 1.5km away on a bearing 200° . Use scale drawing to find
a) the bearing of Q from the railway station. (5mks)

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b) the distance between Q and R

(2mks

c) the shortest distance between Q and the line RP.

(3mks

14. Use logarithms to evaluate

$$\frac{34.53 \times 361.6}{343.7 \times 615.8}$$

(4mks

15. A point P lies on the perpendicular bisector of line LM. Given (2, 1) and M as (6,1).

the co-ordinate of L as

5

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Write the equation of perpendicular bisector.

(3mks

16. The corresponding lengths of two similar iron bars are 5cm and 15cm.

a) Find the ratio of their masses.

(3mks

b) If the smaller iron bar has a mass 12kg, What is the mass of the larger bar.

(3mks

17. From a point P on the ground, 20m away from the foot of a building, the angle of elevation of the top of the building is 25° . Find

a) the height of the building.

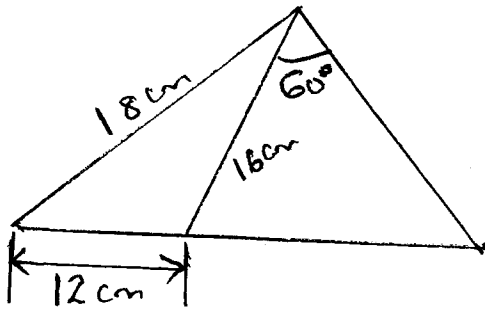
(3mks

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- b) the shortest distance to the top of the building from point P. (3mks)

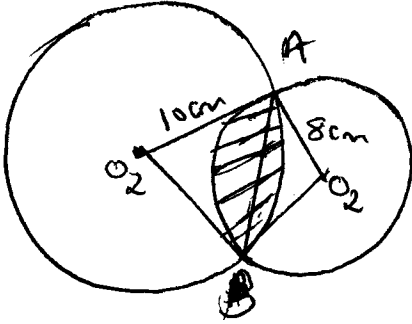
18. Find the area of the following. (5mks)



SECTION 'B'. Choose any TWO from others.

20 MARKS

19. Find the area of the shaded region in the intersecting circles below given that angle $AO_1B = 90^\circ$ and angle $AO_2B = 120^\circ$. (10mks)



20. Solve the following quadratic equation

a) $x^2 + 6x + 8 = 0$

(3mks)

b) the square of a number is 4 more than three times the number. Find the number (3mks)

c) Solve: $x + \frac{20}{x} = 9$

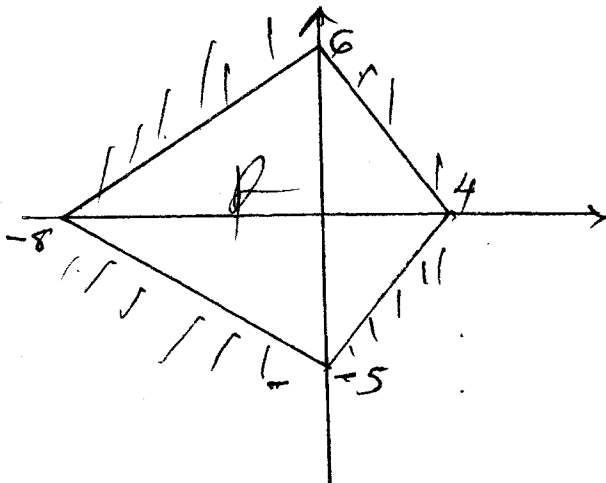
(4mks)

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21. Draw the regions which satisfy all the inequalities and write down three co-ordinates of the region. (10mks)

$$\begin{aligned} 5x + 3y &\geq 15 \\ 6y + 5x &\leq 30 \\ y &\geq 0 \end{aligned}$$

22. From the figure below, write down all the inequalities which satisfy the region unshaded. (10mks)



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23. A Matatu left town A at 7.00 am. And travelled towards town B at an average speed of 60km/h. A second matatu left town B at 8.00 am and travelled towards town A at 60km/h. If the distance between the two towns is 400km,

Find :

- a) The time the two matatus met.
- b) The distance of their meeting points from town A. (10mks)

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