

**GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.**

**FORM 3 MATHEMATICS. END OF TERM 1 EXAMINATION. 2016.**

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

1. Evaluate  $\frac{-4 + (-15)}{84} + \frac{3}{-7} + \frac{(-3 - 4)}{+3} - \frac{2}{-5}$

(3mks)

2. Solve for X given

$$\frac{2X + 1}{4} - 2 = 5 - \frac{X + 2}{4}$$

(4mks)

3. Use Mathematical tables to evaluate 3

$$\sqrt[3]{\frac{41.07 \times 0.03142}{0.0156 \times 5.894}}$$

(4mks)

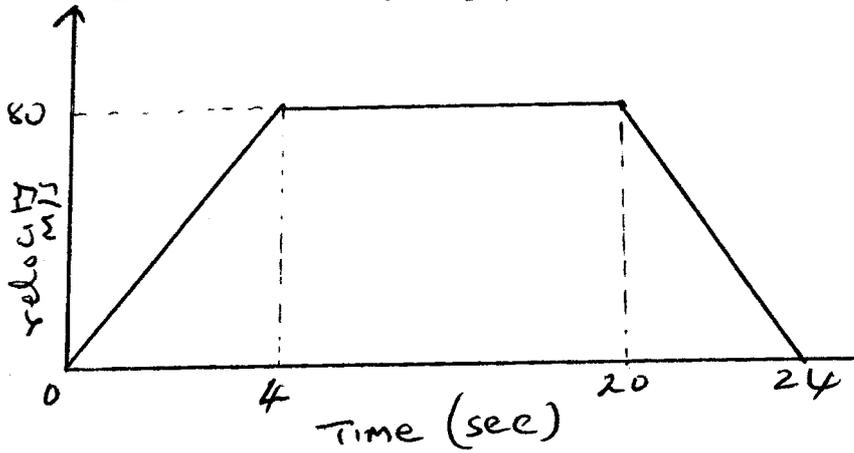
4. A two digit number is such that their product is 10. If the digits are reversed, the number formed exceeds the original by 54. Find the number. (4mks)

5. The gradient of a line L through A(2x, 4) and B(-1, x) is  $\frac{1}{7}$ . Find the equation of the line perpendicular to L through B. (4mks)

6. The sum of the interior angles of an n – sided polygon is  $1260^\circ$ . Find the value of n and hence name the polygon. (3mks)

7. The similar Cans have different heights 8cm and the other one 10cm. If the surface area of the larger Can is  $480\text{cm}^2$ . Find the surface area of the smaller Can. (3mks)

8. The figure below is a velocity time graph for a car.



- a) Find the total distance travelled. (3mks)

b) Calculate the deceleration of the Car. (2mks)

9. From a point on a level ground the elevation to the lower window line is  $25^\circ$  and the angle of elevation to the top line of the window is  $32^\circ$ . Calculate the height of the window. (4mks)

10. A man imported a vehicle at sh 600,000 and sold it at 1,080,000. Find his percentage profit if he spent sh 60,000 for clearing and further sh 40,000 for shipping. (3mks)

11. The sides of a parallelogram are 4cm by 5cm and its area is  $12\text{cm}^2$ . Calculate its angles. (3mks)

12. A parallelogram has a length of 8cm and a heights of 5cm. Find  
a) The limits within which the area lies.

(3mks)

- b) The relative error in calculation of its area.

(3mks)

- c) The percentage error in its area.

(2mks)

13. Add the missing term to make the expression below a perfect square.

$$x^2 - 2^2 x + \underline{\hspace{2cm}}$$

(2mks)

14. Draw the graph of  $y = 2x^2 - x - 3$  for  $-3 \leq x \leq 3$

(5mks)

b) Using a suitable line, solve

i)  $2x^2 - x - 3 = 0$

(2mks)

ii)  $2x^2 - x - 3 = 0$

(2mks)

15. Six weeks after planting, the height of maize plants were measured as shown.

Heights	0 - 4	5 - 14	15 - 19	20 - 24	35 - 50
Frequency	3	8	19	15	30

a) Estimate the median

(4mks)

b) Draw on the same axis a histogram and a frequency polygon to represent the above information.  
(6mks)

16. Using a pair of compasses and a ruler only.
- a) Construct a triangle ABC such that  $AB = 8\text{cm}$ ,  $BC = 6\text{cm}$  and  $\angle C = 30^\circ$  (3mks)
- b) Measure the length AC (1mk)
- c) Draw a circle that touches the vertices A, B and C (2mks)
- d) Measure the radius of the circle and hence determine the area outside the circle. (4mks)

17. Two towns A and B are 80km apart. Juma started cycling from A to town B at 10.00 am at an average speed of 40 km/h. Mutuku started his journey from B to A at the same time and travelled at a speed of 60 km/h.

a) Calculate

i) The distance from A when Juma met Mutuku.

(5mks

b) The time of the day when they met.

(3mks

c) The distance of Juma from B when Mukuku reached A.

(2mks

