**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Adm No: \_\_\_\_\_\_\_\_\_\_Class:\_\_\_\_\_\_\_\_**

**Candidate’s Signature**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**GITHUMU HIGH SCHOOL**

**MATHEMATICS**

**FORM 1**

**OCTOBER/NOVEMBER/DECEMBER 2024 HOLIDAY ASSIGNMENT**

1. Write in words 27707807. (1MK)

2. The sum of three consecutive whole numbers is 84. Find the numbers. (3MKS)

3. A number n is such that when it is divided by 27, 30 or 45, the remainder is 3. Find the smallest value of n. (3MKS)

4. Use the number line to perform the following operations.

a) (-10) - (-3) (1MK)

b) (+1) - (-8) (1MK)

c) (-3) + (-4) (1MK)

5. If x=-2, y=-6 and z=4, find the values of:

a) 2y-3x+z (2MKS)

6. Solve (3MKS)

1. A Kenyan company received US Dollars 100,000.The money was converted into Kenya shillings in a bank which buys and sells foreign currencies as follows:

**Buying**  **Selling**

(Kenya shillings) (Kenya shillings)

1 US Dollar 137.24 137.44

1 Sterling Pound 131.93 142.27

Calculate the amount of money, in Kenya shillings, the company received. (3MKS)

8. A farmer has 165 orange trees on his farm. 38 trees have 97 oranges each, 79 trees have 176 oranges each, and the rest have 59 oranges each. How many oranges are there altogether? (3MKS)

9. Express as a single fraction (3MKS)

10. Given that 1. = 1. Find the value of a and b (3MKS)

11. On a certain day, a student measured the temperature inside a deep freezer and found that it was -3 while the room temperature was 24. What was the temperature difference between the room and the deep freezer? (2MKS)

12. Using tables find the:

a) Square of 4.973 (2MKS)

b) Square root of 0.146 (2MKS)

13. An integer p is two-thirds of another and their difference is 10. Find the two integers. (3MKS)

14. Write the following in standard form: (2MKS)

a) 0.00121

b) 4521.021

15. Evaluate correct to three decimal places. (4MKS)

16. Find the square root of 1764 using factor method. (3MKS)

17. Remove the brackets and simplify.

 (3MKS)

18. Three bells ring at intervals of 6minutes, 5minutes and 8minutes, if they rang first at 9.15 am, find when they will ring for the third time. (3MKS)

19. The table below shows a time table for a public surface vehicle operating between two towns A and D via town B and C.

|  |  |  |
| --- | --- | --- |
| town | Arrival time | Departure time |
| A |  | 8:20am |
| B | 10:00pm | 11:00am |
| C | 2:30 pm | 3:45pm |
| D | 4:pm |  |

1. At what time in 24hour clock system:
2. The vehicle leaves town A. (2MKS)
3. The vehicle arrives in town D. (2MKS)
4. How long does it take to travel from town A to D. (4MKS)
5. If the distance between the two towns A and D is 900km, find the average speed of the vehicle. (2MKS)
6. . The G.C.D of two numbers is 48 and their L.C.M is 960. If one of the numbers is 240, find the other number. **(3 mrks)**
7. Three boys shared some money. The youngest got of it, the next got and the eldest got the remainder. What fraction of money did the eldest receive? If the eldest boy got sh. 330, what was the original amount of money? **(3 mrks)**
8. Factorise
9. **(2 mrks)**
10. **(2 mrks)**

**SECTION I (50 Marks)**

1. All even numbers less than ten are arranged in descending order to form a number.
2. Write the number formed (1 mark)
3. State the total value of the second digit in the number formed in (a) above (1 mark)
4. A man imported a machine at Sh. 600 000 and sold it at Sh. 1 080 000. Find the percentage profit if he spent Sh. 60 000 for clearing the machine from the port and a further Sh. 40 000 for shipping. (3 marks)
5. A liquid spray of mass is packed in a cylindrical container of internal radius . Given that the density of the liquid is ,calculate to 2 decimal places the height of the liquid in the container (4 marks)
6. Without using tables or a calculator evaluate (3 marks)
7. Given that , find the difference between a and b. (3 marks)
8. Mapesa travelled by train from Butere to Nairobi .The train left Butere on Sunday at and travelled for to reach Nakuru .After stop, in Nakuru ,the train took to reach Nairobi .Find the time, in the and the day Mapesa arrived in Nairobi (2 marks)
9. Three similar pieces of timber of length are cut into equal pieces .Find the largest possible area of a square which can be made from any of the three pieces (3 marks)
10. Evaluate (3 marks)
11. In the figure below, a circle centre O and radius R =24 cm the minor arc **AB** subtends an angle of at the centre of the circle and the corresponding sector **AOB** .Calculate the area of minor sector **AOB (**take **) (**3 marks)



1. Wekesa spent one eighth of his February salary on farming , half on school fees and two thirds of the remainder on food .If he spend shs 3200 on food Calculate
2. His February salary (2 marks)

1. The amount he spent on school fees. (1 mark)
2. In the figure below, lines AB and PR are parallel. Angle and angle . Giving reasons find the values of and . (3 marks)



1. Find the prime factors of the following numbers leaving the answer in power form.
2. 300 (2 marks)
3. 24 (1 mark)
4. A cylindrical tank of diameter is two-thirds full of water. Calculate the capacity of the tank in litres ( (3 marks)
5. Below is a net of a model of a solid. The lengths and lengths Sketch the solid of the net by taking ABC as the base and the height 5 cm. (3 marks)
6. Using a ruler and pair of compasses **only** construct triangle **ABC** in which and angle **.** Measure line **AB** (4 marks)
7. Simplify the following expressions
8. (2 marks)
9. (2 marks)

**SECTION II (50 marks)**

**Attempt any ALL questions in the spaces provided in this section**

1. On applying brakes, a train travelling at s km/h can be stopped within a distance d metres where

The table below shows some values of s and d

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 60 |

1. Complete the table above. (2 marks)
2. Using a scale of 1 cm to represent 5 units on both axes, draw the graph of d against s. (4 marks)



1. Use the graph to determine;
2. The stopping distance for a train travelling at 36 km/h. (1 mark)
3. The stopping distance for a train travelling at a speed of 55 km/h. (2 marks)
4. The speed at which the train is travelling if its stopping distance is 44 metres. (1 mark)
5. (a) Find the area of the figure below (2 marks)



 (b) A piece of wire is in the shape of an arc of a circle, radius 10.5cm .The angle at the centre is

1. Calculate the length of the wire (2 marks)
2. If the wire is bent to form a complete circle find its radius (3 marks)

 (c) A flower garden measuring 10m by 15m is surrounded by a path 2m wide as shown below. Find the area of the path (Unshaded region). (3 marks)



1. (a) Solve for in the following equations
2. (2 marks)
3. (3 marks)

 (b) A cloth dealer sold 3 skirts and 2 blouses for k.sh 840 and 5blouses and 4 skirts for Ksh 1680. Find the cost of 1skirt and 1 blouse (3 marks)

 (c) Use substitution method to solve the simultaneous equation (2 marks)

1. (a) A farmer keeps cattle, goats and sheep in the ratio 6:2:3, the he decides to reduce the by and respectively. Find how many are left if initially there were 1452 animals in his farm? (3 marks)

(b) Ngari sold a mobile phone costing Sh. 3 800 at a profit. He earned a commission of 10% on the profit. Find the amount earned if he made a profit of 40%. (3 marks)

(c) The ratios and are equivalent. Find the value of . (2 marks)

(d) A dress which was costing Sh. 1 400 now sells at 800. Determine the percentage change. (2 marks)

1. Four ships are at sea, such that a steamliner **S** is 150km on a bearing of from a cargo ship **C.** A trawler **T** is 300km on bearing of from the cargo **ship** **C** and a Yacht **Y** is due west of **C** and on a bearing of from **T.**
2. Using a scale of draw an accurate scale drawing showing the positions of **S,C,T and Y** (5 marks)
3. By measurement from your scale drawing determine
4. The distance and bearing of **Y** from **S** (3 marks)
5. The distance **ST** (1 mark)
6. The distance **YT** (1 mark)