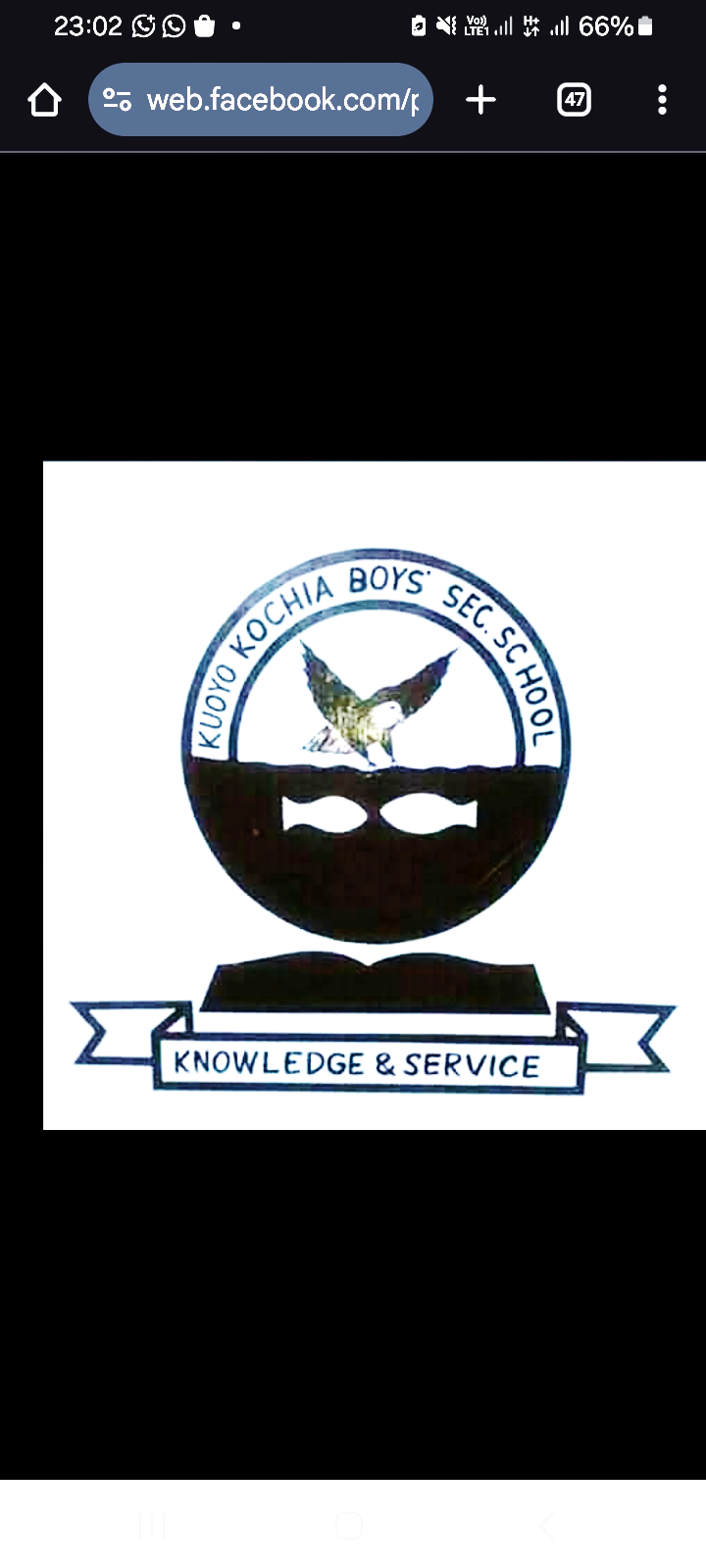
**KUOYO KOCHIA BOYS’ HIGH SCHOOL**



**FORM TWO**

**MATHEMATICS- MARKING SCHEME**

**NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ADM NO\_\_\_\_\_\_\_\_\_ Stream\_\_\_\_\_\_ DATE\_\_\_\_\_\_\_\_\_\_\_\_**

**121**

**MATHEMATICS**

**Term 2 2025**

**TIME: 21/2 HOURS**

**MID-TERM TWO EXAMINATIONS 2025**

**INSTRUCTIONS TO THE CANDIDATES**

1. *Write* ***your name*** and ***stream*** *and* ***Admission number*** *in the spaces provided above*
2. *This paper contains* ***two*** *sections;* ***Section I*** *and* ***Section II****.*
3. *Answer* ***all*** *the questions in* ***section I*** *and* ***ALL*** *questions from* ***Section II***
4. ***Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.***
5. *Marks may be given for correct working even if the answer is wrong.*
6. *Non-Programmable silent calculators and* ***KNEC*** *Mathematical tables may be used* ***EXCEP****T where stated otherwise.*

**FOR EXAMINERS’S USE ONLY**

**Section I**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Question | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | Total |
| Marks |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Section II** **GRAND TOTAL**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Question | **17** | **18** | **18** | **19** | **20** | **21** | **Total** |
| Marks |  |  |  |  |  |  |  |

*This paper consists of 12 printed pages. Candidates should check carefully to ascertain that all the pages are printed as indicated and no questions are missing.*

**SECTION I [ 50 MARKS]**

***(Answer All Questions in this section)***

1. The GCD of two numbers is 17 and their LCM is 140. If one of the numbers is 20, find the other number. (3 marks)

|  |  |
| --- | --- |
| *= 119* | B2  A1 |

1. Evaluate without using tables or calculators; (3 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Numerator | Denominator |  |  |
|  |  |  | M1 for correct numerator solution  M1 for correct denominator solution  A1 for correct final answer |

1. Use the elimination method to solve the simultaneous equations (3 marks)





|  |  |  |
| --- | --- | --- |
| ×  .... i  -  …. ii  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  -13y = 13 |  | M1 for eliminating  M1 for substituting to solve next variable  A1 for stating final values of x and y |

1. The sum of interior angles of a regular polygon is 1080o, Find the size of each exterior angle. (3 marks)

|  |  |
| --- | --- |
| o | M1 for equating  M1 for finding correct n  A1 correct size of exterior angle |

1. A trader sold a wrist watch for sh. 3,150 after giving a 10% discount. Find the marked price of the watch. (2 marks)

|  |  |
| --- | --- |
|  | M1 correct equation of 100%  A1 for correct marked price |

1. The ratio of the radii of two spheres is 2:3. Calculate the volume of the first sphere if the volume of the second is 20cm3. (3mks)

|  |  |
| --- | --- |
| = = | M1 for V.S.F  M1 for correct equation of v  A1 correct volume |

1. Maina spent one eighth of his May salary on farming, half on school fees and two thirds of the remainder on food. If he spent sh. 3200 on food. Calculate;
2. His May salary. (3 marks)

|  |  |
| --- | --- |
| Farming =  Fees =  Remainder = =  Food =  Total February Salary = | M1 for finding the fraction remainder  M1 for finding fraction on food  A1 for total February salary |

1. The amount he spent on school fees. (1 marks)

|  |  |
| --- | --- |
| School Fees = × 12800 | B1 |

1. Use logarithm tables to evaluate: (4 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Number | Standard form | log | M1 finding correct logs of the numerator  M1 Finding correct log of denominator  B1 dividing result by 2  A1 correct answer |
| 3.45  16.7  31.5 | **Sum of logs**  **Difference of logs** | **-** |
| 0.1311  Finding antilogarithm. | | |

1. a) The length of a rectangle is three times its width. If its perimeter is 24cm what is the length of the rectangle. (2 marks)

|  |  |
| --- | --- |
| Let the width be  = | M1 for correct perimeter equation  A1 for the correct length (check units) |

b) Find the Area of the rectangle. (2 marks)

|  |  |
| --- | --- |
| =27 | M1  A1 ( check units- |

1. Evaluate 540396-726450÷3 (2 marks)

|  |  |
| --- | --- |
|  | M1  A1 |

1. Write the total value of the digit in thousands place of the results in (a) above. (1 mark)

|  |  |
| --- | --- |
|  | A1 |

1. Solve for in of the following equation. (3 marks)

|  |  |
| --- | --- |
|  | M1 for expressing 27 to base of 3  M1 for equating the powers  A1 for correct value of |

1. Given that , find the a and b. (3 marks)

|  |  |
| --- | --- |
| ……i  ……. ii  …. iii  Subtracting (i) from (iii)  Gives  = | M1 for expression in terms of r  M1 for finding the value of r  A1 for correct values of |

1. A bank in Kenya buys and sells foreign currencies as follows.

|  |  |  |
| --- | --- | --- |
| **Currency** | **Buying(Ksh)** | **Selling(Kshs)** |
| 1Sterling pound | 134.20 | 134.65 |
| 1US dollar | 71.40 | 71.84 |

A tourist arrived in Kenya with 4500 US dollars. He converted all the dollars to Kenya shillings at the bank. While in Kenya he spent Ksh. 215,000 and then converted the remaining amount to sterling pounds in the same bank. Calculate the total amount he received to the nearest sterling pound. (3 marks)

|  |  |
| --- | --- |
| Convert USD into Ksh  Remaining Amount in Ksh After spending  Amount in sterling pounds = | M1 for converting USD into KSh  M1 for getting reaming amount in KSh  A1 for getting remaining amount to the nearest sterling pounds. |

1. The length of an arc of a circle is . If the arc subtends an angle 144 at the centre, calculate the radius of the circle (Take (3 marks)

|  |  |
| --- | --- |
| Length of arc =  =  =  = | M1 for equating 8.8 to the formula expression  M1 for making r the subject and evaluating interms of r  A1 for correct value of r ( check units) |

1. Three years ago Maureen was three times as old as Branice. In two years time the sum of their ages will be 62. Determine the **sum** of their present ages. (4 marks)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Let Maureen’s present age be   |  |  |  |  | | --- | --- | --- | --- | |  | Ago | Present | Future | | Maureen |  |  |  | | Branice |  |  |  |   Sum of present ages: | M1 for expressing the ages in terms of  M1 finding the sum of ages in terms of  M1 finding the correct value of  A1 for finding correct sum of ages in two years’ time |

1. Show how the following operation can be performed using a number line and give the results. (2 marks)

|  |  |
| --- | --- |
| Result = 2 | M1 for correct number line  A1 for correct result , accept |

**SECTION II [ 50 MARKS]**

***(Answer all questions in this section)***

1. A straight line passes through points and.
2. Find the gradient of line PQ (2 marks)

|  |  |
| --- | --- |
| and.  m= =  m = | M1 for correct gradient equation  A1 for gradient |

1. Find the equation of line PQ inform of . (2 marks)

|  |  |
| --- | --- |
|  | M1 for forming the equation using gradient and correct points  A1 for correct equation in form of |

1. The equation of a line is. Find the:
2. Gradient of the line (1 mark)

|  |  |
| --- | --- |
| 3y = | A1 for finding correct gradient |

1. Equation of the line passing through point and perpendicular to the given line. (3 marks)

|  |  |
| --- | --- |
| For perpendicular lines;  = | M1 for finding  M1 for correct use of to find the equation  A1 for correct equation |

1. Find the equation of a line parallel to the line and passes through point.(2 marks)

|  |  |
| --- | --- |
|  | M1 for using the for correct gradient to form equation  A1 for correct equation |

1. Given that = and is an acute angle find the value of (2 marks)

|  |  |
| --- | --- |
| If =  In a right angled triangle;  Therefore = | M1 for finding correct B by Pythagoras theorem  A1 for finding |

1. Solve for the acute angle , given that ; (3 marks)

|  |  |
| --- | --- |
| For complementary angles  =  Therefore  o | M1 for summing up and equating to 90  M1 simplifying  A1 finding |

1. A ladder leans against a wall so that its foot is away from the foot of the wall and its top is up the wall. Calculate the angle it makes with the ground (3 marks)

|  |  |
| --- | --- |
| o | M1 for correct application of  M1 for introducing correctly  A1 for correct value of |

1. Solve for in the following equations

(2 marks)

|  |  |
| --- | --- |
| Multiplication across by LCM to find  = | M1 for getting the linear equation  A1 for correct value of |

1. Mr. Kinyua spent 1/4 of his net January salary on school fees. He spent 1/4 of the remainder on electricity and water bills. He spent 1/9 of what remained on transport. If he finally had

, calculate

1. His net January salary. (4 marks)

|  |  |
| --- | --- |
| Fees =  Electricity :  Remainder = 1- ( =  Transport = []=  Total used = (  Remainder =  Net salary =  Sh. 6800 |  |

1. Money spent on school fees. (2 mark)

|  |  |
| --- | --- |
| Fees =  = |  |

1. The amount he spent on transport. (2 marks)

|  |  |
| --- | --- |
| Transport =  = |  |

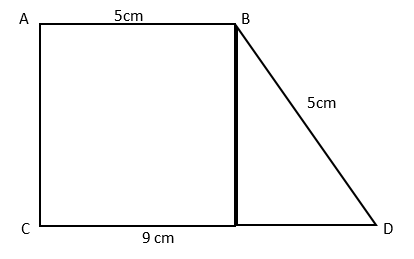
1. The amount he spent on electricity and water bills. (2 marks)

|  |  |
| --- | --- |
| Electricity and water bills =  = |  |

1. a) A traditional stool has a triangular top which measures and . Calculate the area of its top. (2marks)

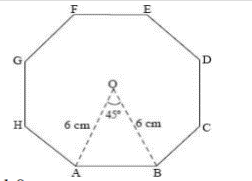
|  |  |
| --- | --- |
| =  Area =  Area = | M1 correct formula application  A1 correct Area; check units - |

b) Find the area of the figure below, given that and angle ( 3 marks)



|  |  |
| --- | --- |
| Finding height  H=  H= 3 cm  Area of trapezium  A=  A= | M1 for Finding Height H  M1 for correct formula application  A1 correct Area; check units - |

1. i. The figure below shows a regular octagon ABCDEFGH, with its O as its center. If OA is , find its area. (3 marks)



|  |  |
| --- | --- |
| Area =  = 12.7279  Total area = )cm2  A= | M1 finding area of 1 triangle  M1 multiplying by number of triangles  A1 correct Area; check units - |

ii) Find the length of AB in the figure above. (2marks)

|  |  |
| --- | --- |
| =  AB =  = | M1 for applying sin  A1 correct length of AB |

1. Akinyi, Bundi, Cura and Diba invested some money in a business in the ratio of respectively. The business realized a profit of . They shared of the profit equally and the remainder in the ratio of their contributions. Calculate the total amount of money received by Diba.

(4 marks)

|  |  |
| --- | --- |
| Amount shared equally  =  Remaining amount  **Diba** Earning from amount shared equally  =  **Diba Total earnings**  () | M1 for amount shared equally  M1 for getting Diba’s share by ratio  M1 Summing up two shares  A1 for correct Total Diba’s earning |

1. A salesman gets a commission of on the sales up to . He gets an additional commission of on sales above sh. 100,000. Calculate the commission he gets on sales worth
2. marks)

|  |  |
| --- | --- |
| Commission earned on sales up to 100,000  Condition (sales above condition)  Commission earned on sales above 100,000  Total commission | M1 getting Commission earned on sales up to 100,000  M1 getting Commission earned on sales above 100,000  M1 getting the condition  A1 getting total commission |

1. The diagonals of a rhombus measure 9.2 cm and 7.5 cm respectively. Calculate the area of the rhombus (2 Marks)

|  |  |
| --- | --- |
| Area of the rhombus  A= | M1  A1 |

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