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Department of Education, Southern Province

YEAR END EVALUATION 2022 / 2023

| Grade 8 | **MATHEMATICS** | 2 hours |

Name / Index Number ....

PART I

- **Write down the answers for all the questions in the paper itself.**
- **Each question carries 2 marks.**

1. General term of a number pattern is $4n$. What is the 15th term of the number pattern?

2. Place a ($\sqrt{}$) in front of the correct statements and Place a (x) in front of the incorrect statements about directed numbers.

   i) Multiplying 2 directed numbers with different signs gives a positive number.   (   )

   ii) Dividing 2 directed numbers with different signs gives a positive number.   (   )

3. Find the value of $x°$

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   60^0 x^0

4. Solve. $\frac{x}{3} - 1 = 5$

5. Find the value $(-2)^3 \times 2^2$

   mathematica.lk

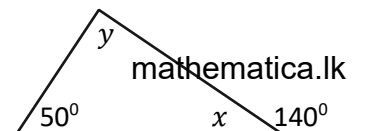6. What is the order of rotational symmetry of a rhombus?

7. Underline the answer with 5 platonic solids.

   i. Icosahedron, Dodecahedron, Cube, Regular tetrahedron, Cuboid

   ii. Square based pyramid, Cube, Cuboid, Dodecahedron, Icosahedron

   iii. Cube, Regular tetrahedron, Regular octahedron, Regular Icosahedron, Regular Dodecahedron

   iv. Cube, Icosahedron, Dodecahedron, Regular octahedron, Cuboid

8. Find the value of x and y

   $x° =$

   $y° =$

   y

   mathematica.lk

   50^0 x 140^0

9. Simplify 12 t ÷ 5, Write the answer in kg

10. Simplify. $\frac{2}{7} \times \frac{3}{4}$

11. Represent 48:36 in the simplest form.

12. The capacity of a water tank is 2500 l. If the length is 2.5m and breadth is 1m, find the height of the tank.

13. Find the value taken for x to get equal value for mode and median in the set of data 4, 1, 2, 2, 3, 5, x, 8, 3, 1

14. Sri Lanka is in the $+5\frac{1}{2}$ time zone. When the time in Malaysia is 14:30 find the time in Sri Lanka
    (Malaysia is in +8 time zone)

15. Which of the following is not the units place of a perfect square?
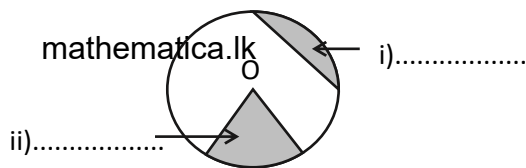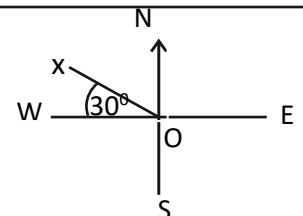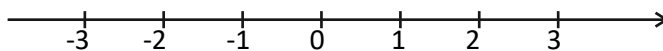   1) 1   2) 2   3) 5   4) 9

16. Name the segment and the sector of the circle of centre O

i)..................

ii)..................

17. Write the location of X as seen from the point O using the information given.

18. Represent $x \geq -1$ on the number line given.

19. There are 5 white beads, 3 blue beads and 2 red beads in a bag, which are identical in size and shape. A bead is drawn randomly from the bag,
    i.   Find the probability of drawing a blue bead
    ii. Find the probability of drawing a white or red bead

20. Remove the brackets and simplify. $3(5x - 1) - 8x$.

MATHEMATICS - PARTII

- **Answer 5 questions only.**
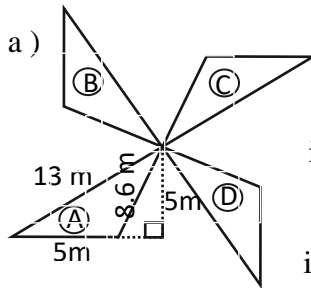- **Each questions carries 12 marks.**

01. The masses of bags in kilogrammes of 24 students who participating for a trip are given below.

20	20	28	17	15	24	44	51
10	29	12	23	25	32	34	18
30	36	36	40	36	42	13	15

     i. What is the minimum mass of a bag ?   (1 mark)

    ii. What is the maximum mass of a bag ?   (1 mark)

    iii. Represent the above data in a stem and leaf diagram .   (5 marks)

    iv. What is the range of the above collection of data?   (2 marks)

    v. What is the mode?   (1 mark)

    vi. Find the median mass   (2 marks)

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02. (a) A part of a wind generating machine made with identical blades A, B, C, D is given.

13 m, 8.6 m, 5m, 5m

  i. It is decided to stick a rubber band around a triangular blade. Find the length of rubber band needed to stick around 4 blades.   (2 marks)

  ii. Find the area of blade A   (3 marks)

  iii. Find the area of metal plate need to construct all 4 blades   (2 marks)

  iv. The price of 1 m^2 of metal plate is Rs.1 000 and the price of 1m of rubber band is Rs.500. Find the total cost to construct this machine.   (3 marks)

(b) Find the surface area of a cube of side length 8 cm   (2 marks)

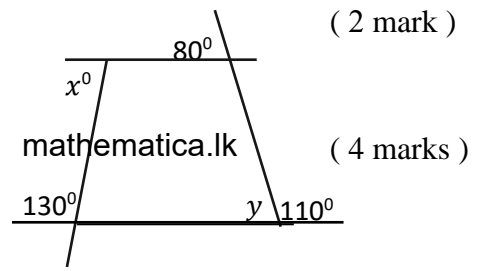03. (a) Father decides to give $\frac{2}{5}$ of the land to his son Vishwa.

  i. Write the remaining part to the father after giving it to the son as a fraction of the whole land.

     (2 marks)

- After giving it to the son, he divided the remaining part equally among his three daughters.

  ii. Write the part of the land did a daughter receive as a fraction of total land.   (2 marks)

  iii. If daughter receives 15 perch, what is the total amount of land owned by the father? (2 marks)

  (b) 60% of workers in a office are females. The number of male workers are 36 . Find the total number of workers in the office.   (3 marks)

(c) The ratio between A and B is 20 : 7. Write the ratio between B and A . Write it as a percentage.

     (3 marks)

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04. i) Construct the triangle ABC such that AB = 7 cm, BC= 5cm and AC = 6cm   (4 marks)

   ii) By considering the lengths of the sides which type of triangle is that?   (1 mark)

   iii) Measure and write the magnitudes of the angles $A\hat{B}C, A\hat{C}B$ and $B\hat{A}C$ in the triangle ABC

      separately.   (3 marks)

   iv) Find the value of $A\hat{B}C + A\hat{C}B + B\hat{A}C$ (1 mark)

   v) Find the midpoint of the straight line AB and name it as O. By taking AB as the diameter and

      draw a circle .   (3 marks)
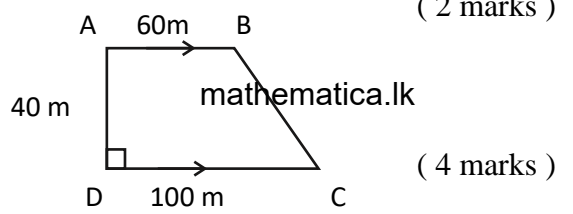

05.(a) Fill in the blanks using the symbols $\in$, $\notin$, $\subset$, $\subseteq$

      i.   13 ....{ prime numbers}   (1 mark)
      ii.   { 7 } .... { composite numbers }   (1 mark)
      iii. 5..................{ triangular numbers}   (1 mark)

(b) i) A = { letters of the word "MAHARAGAMA"}
Write the elements of the above set within curly brackets.   (2 marks)
   ii) Find n (A)   (1 mark)
   iii) Write the above set in another notation.   (2 mark)

(c) Find the values of x and y using the information given
      in the figure.   (4 marks)

$$80^0$$
$$x^0$$
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$$130^0 \qquad y \quad 110^0$$

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06. i) Draw a Cartesian plane numbered from -5 to +5 in both axis and plot the points given below.

   (-3, 2) , (-1, 2) , (1, 4) , (3, 2) , (5 ,2) , (5, -2) , (3, -2) , (1, -4) , (-1, -2) , (-3, -2) (3 marks)

   ii) Join the points in order and get a closed figure.   (3 marks)

   iii) Write the equation of the axis of symmetry of the figure.   (3 marks)

   iv) Write two coordinates which lies on $x = 2$ (3 marks)

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07. (a) i) In a scale diagram, 1cm represent 400 m of actual diagram. Write the scale as a ratio.(2 marks)

      ii) What is the actual length represented by 5 cm in a scale diagram which is drawn to the
         scale of 1 : 500   (2 marks)
      iii) Draw this figure to the scale 1 :1000

A   60m   B

40 m   mathematica.lk

         (4 marks)
D   100 m   C

   (b) Write as product of two factors.   (2 marks)
        $4x - 2y - 10$
   (c) Draw a regular tessellation using suitable polygons.   (2 marks)