RWENZORI REGION SESEMAT

S2 END OF YEAR ASSESSMENT 2022

MATHEMATICS

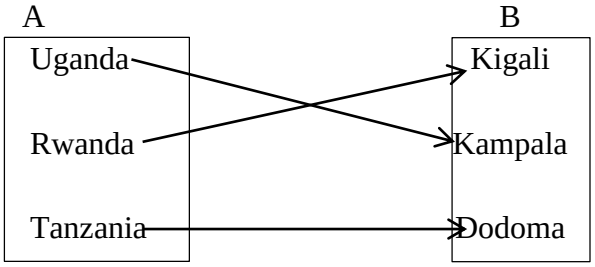
TIME 1 ½ HOURS

INSTRUCTIONS

1. Attempt all the questions in section A and section B
2. All necessary working must be done in the answer sheets provided
3. Simple non programmable scientific calculators may be used

SECTION A (SHORT RESPONSE QUESTIONS)

1.

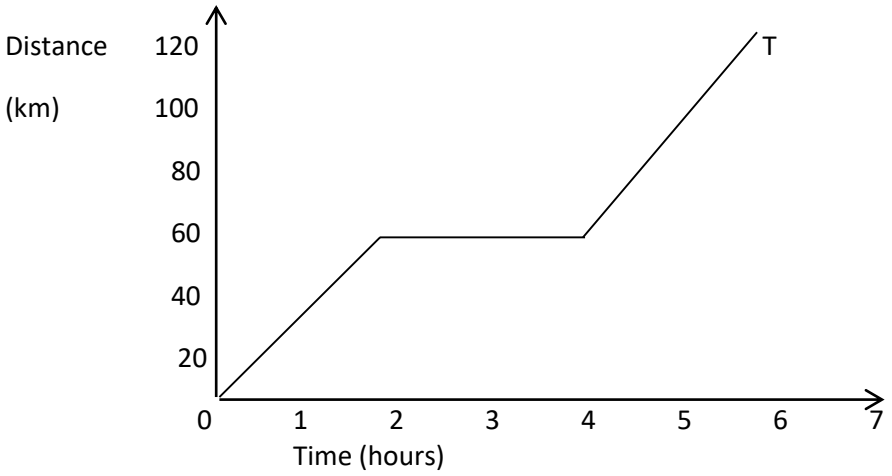


Study the mapping above and use it to answer the questions below

a) What is the special name given to set A and set B
b) What is the relation that relates set A and set B
c) Identify the type of mapping shown above

2. A student carried out an experiment to measure the length of the maize leaves in centimeters and obtained the following results
   12,20,18,25,26,25,30,20. Calculate the:
   i) The average length of the leaves
   ii) The median length
3. Solve the equation to find the value of x , showing all the steps
   2x -3 = 6x + x -58

4. The graph below shows the motion of a bird from point O to point T.



Use the graph to describe the journey of the bird.

5. a) Evaluate 4.76 + 5.62 + 33.2 and state the number of significant figures

b) Round off 15.265 g to:

i) Three significant figure
ii) one decimal place

6. A farmer wishes to fence off a piece of land whose length is 12 metres more than the width. If the area of the piece of land is $45m^2$. Help him to find the dimensions of the piece of land.

7.

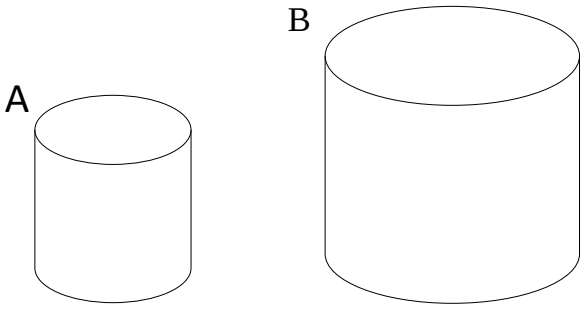


Figure A and B are similar. If the radius of A= 8 cm and linear scale factor between A and B is 4. Find the

a) Radius of B
b) Area scale factor
c) Volume scale factor

8. For the sequence of 3, 7,11,15,……,……..,…….
Find the next three numbers.

9. A student was tasked to simplify the expression
$\left(\frac{0.006\,x\,10^3}{2x10^7}\right)$ giving the final solution in standard form. Guide her through the steps.

10. A cyclist moves 3km due East of a point A. She then turns off on a bearing of 180^0 and cycles 4km in this direction.
    i) Represent the information on a sketch diagram.
    ii) How far is she from point A.

SECTION B (EXTEDED QUESTIONS)

11. Using a ruler and a pair of compasses only
    i) Construct a triangle ABC in which AB = 8.5 cm BC=6cm and angle ABC=30^0
    ii) Construct a circle through the vertices of the triangle
    iii) Work out the area of the circle.
12. A school had certain regulations about the amount of pocket money and the numbers of casual wear were allowed to have in their dormitories. During the inspection of the dormitory which contained 16 students, it was found that 8 students had too much pocket money and 9 students had too many casual wear
    (a) What was the number of students breaking both rules?
    (b) How many students were breaking regulation of pocket money only?
    (c) How many students did not break any rule?

13. a) Plot the points A(2,2) , B(5,2) C(5,-4) D(2,-4) and join A to B ; B to C and C to D and D to A. Name the figure formed

    b) The figure ABCD has been translated using vector $\binom{2}{3}$ to form image $A^1\,B^1\,C^1\,D^1$
    Determine the image coordinates of $A^1\,B^1\,C^1\,D^1$

END