

S.1 MATHEMATICS

INSTRUCTION: *Answer ALL items*

ITEM 1

The time taken by 3 athletes(students) to complete a race in certain running competition organized by the P.E master were recorded in **table 1**, below;

Athlete	Time taken(seconds)
Obongi Ronald	1011101 _{two}
Makubuya Frank	27 _{eight}
Ssali Sulaiman	135 _{six}

Table 1

The student in the first position is one who takes the smallest time to complete the race. According to the sports master, these students are to be awarded according to the position they finish in this running competition as summarized in **table 2**, below;

Position	Award
1 st position	Shs. 86700
2 nd position	Shs. 63300
3 rd position	Shs. 24000

Table 2

As a mathematics student;

- Help the sports master distribute these awards amongst the athletes without fear or favor.
- Write the money received by the 1st and 2nd positions in words.

ITEM 2

Sarah went for shopping with shs.240,000. When she went back home, she informed her grandfather that she had spent 25% of the money on drinks, $\frac{1}{3}$ on eats and 0.2 of the money on transport. Upon checking in her bag, she realized she had lost some of the money that had remained on her way back home, however, she couldn't recall how much money had remained in total. The grandfather seems to be confused with her information and she has approached you for help;

As a Mathematics student;

- Help her grandfather understand how much money was spent on each item?
- Help him know what her balance was?
- Express the money she spent on eats as a percentage of money she went with.

ITEM 3

A farmer has been told to construct a triangular structure as shelter for his cows. The three corners of the structure are meant to be at points A, B, and C, such that side $AB = 6m$, $\angle BAC = 45^\circ$ and $\angle ABC = 60^\circ$. Unfortunately, he has no idea at all about how the structure would look like and has approached you for help;

As a Mathematics student;

- a) Using scale drawing and construction skills, help the farmer come up with an accurate plan of how the structure would look like.
- b) Help him establish the sizes of the sides BC and AC

ITEM 4

PMSS wishes to plant four eucalyptus trees in the school compound. A concerned teacher has advised the school administration to plant the trees at the following points on the Cartesian plane: A (1, 20), B (-3, 30), C (-2, -10) and D (2, -20) claiming that the trees would make a beautiful shape and the compound will look better. However, the headteacher is not convinced by the teacher and is demanding to first know how exactly the trees would appear before committing to the advice of the teacher.

As a mathematics student;

Use scale drawing to convince the headteacher by showing him how the compound would look like after planting the trees, and identify the shape formed by the trees.

Hint:

- use a scale of 1 cm to represent 1 unit on the x-axis and 1 cm to represent 5 units on the y-axis.
- Any other scale of your choice can be used.

END