

# VISION VOCATION SECONDARY SCHOOL

## END OF YEAR ASSESSMENT 2024 MATHEMATICS S 2

Attempt only four items

Duration 2 hours only

### Item 1

Due to invasion of floating island on River Nile, James cannot use his usual route to sail from Busaana to Kalangala. He instead first sails North wards to Bukamba the turns to the East to get to Kalangala.

Bukamba is  $30km$  North of Busaana. Kalangala is  $20km$  East of Bukamba. The boat engine consumes diesel worth UGX 1200 per kilometer.

Task.

Help James establish the cost of the extra fuel he will need to caver the unusual distance to safely reach his destination.

### Item 2

A number of communities are often threatened by malaria, cholera and typhoid. A survey was conducted by the health workers in these communities and the found out that 50 were worried about malaria, 50 were worried about cholera and 40 were worried about typhoid. 10 were worried about all the three diseases, 15 about malaria and cholera, 20 about cholera and typhoid, and 15 about malaria and typhoid.

- a) Using a Venn diagram, determine the number of respondent who were worried about;
  - i. Malaria only
  - ii. Cholera only
  - iii. Typhoid only
- b) Find the total number of respondents in t

### Item 3

Zalpha hardware buys cement from Hima factory at  $UGX25000$  per bag and sell it at  $UGX33000$ . The owner spends 1% of the profit to pay commission to his salesmen and 4% to the insurance company. He intent to secure a loan of  $UGX 10,000,000$  from the bank at a simple interest rate of 12% for 5 years.

He is seeking advice on whether he will be able to pay the loan after 5 years using the remainder of his profit. The hard ware sells 1000 bag of cement per day.

Task

Help the owner of the hardware to find out if he should secure a loan.

### Item 4

The Head teacher ants to order for textbooks.

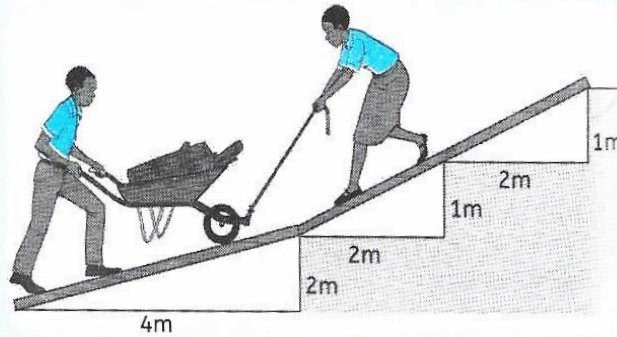
The cost of each book is UGX15, 000. A fixed transport of UGX 50,000 will be needed. UGX 1,250,000 is available for the purchase of the textbooks

Task

Find the maximum number of copies that will be purchase using the amount available.

**Item 5**

A boy is planning to carry some load upstairs on a wheel barrow by using two pieces of timber as shown.



**Task:** Find the total length of the two pieces of timber needed to make the ramp.

**Item 6**

Michael is planning to design a circular round about at his residential home. The diameter of the roundabout is **20m**. He is planning to divide the roundabout into two equal parts. One part will be used to plant flowers and the other will be used to plant some vegetables. The dimension of each flower is 80cm by 60cm. The cost of a plant in a nursery bed is UGX1400 each flower. Michael is not able to determine the amount of money he should prepare to buy flowers.

You have been approached by Michael, help him to determine the total amount he should prepare.

**END**