

UGANDA ADVANCED CERTIFICATE OF EDUCATION
END OF TERM ONE EXAMINATIONS
S425/1 SUBSIDIARY MATHEMATICS
TIME: 1 HOUR AND 45 MINUTES

INSTRUCTIONS

Respond to all the items in this paper

ITEM 1

A farmer in a certain village has visited a statistician to help him analyze his production per year of the crop he produced so that he can decide whether to change to a new seed variety. He plans to buy a new seed variety if the middle mass produced falls below 55 kg. He stored his valuable information about the grain production in his house. Unfortunately, part of his information was destroyed by rats due to poor storage. Luckily enough, a certain page with this table was spared as shown below:

Mass (kg)	9.5-19.5	19.5-29.5	29.5-39.5	39.5-49.5	49.5-59.5	59.5-69.5	69.5-79.5	79.5-89.5	89.5-99.5
Number of bags	50	115	210	315	410	485	550	590	600

Task

Help the farmer to:

- (a) Retrieve the original information about his production in a frequency distribution table, and determine the variance and standard deviation of production per year.
- (b) (i) Determine the middle mass of grains he produced last season so as to plan well for the next season.
- (ii) Will the farmer change to a new seed variety?

ITEM 2

At a school sports day there are 2 houses Mutesa and Mwanga houses who are competing closely for the first position, the races left are the track and relay races. Points are awarded for the first, second and third positions only the following table shows the points for each position.

	First	Second	Third
Track	3	2	1
Relay	7	5	2

During the races the performances recorded were as follows Mutesa house got 3 first, 4 seconds and nil thirds in the track events and 1 first, 2 seconds and 1 third in relays, while Mwanga house had already calculated their total points for all the activities as 410, The house prefect of Mutesa house knows that they already have 387 points and wants to determine if they have been able to win Mwanga house by determining the points they have got in the races.

After the sports day the sports master wanted to award the participants with boxes of water and tins of glucose. He went to the shop and bought 2 boxes of water and 3 tins of glucose which costed him shs 50,000. They were not enough and gave a student shs. 40,000 to go to the shop to buy 2 boxes of water and 1 tin of glucose and was give a change of shs. 5000. He need to know the cost of each bottle of water and one tin of glucose for future preparations

Task

- (a) By organizing the information in rows and columns determine the total number of points tiger house got in the races.
- (b) Which house emerged the winner?
- (c) Help the sports master to determine the cost of 1 box of water and the cost of one tin of glucose.

ITEM 3

A school nurse keeps a record of the height measured to the nearest centimeters of a group of students she treats for a certain infection at the school clinic. The data was summarized in the table below.

Height(cm)	110-119	120-129	130-139	140-149	150-159	160-169	170-179	180-189
Number of students	11	3	10	8	65	98	55	15

It is assumed that the mean height of students is 154.5cm and the school administration wants to find out the average height and the height in which the greatest number of students treated falls.

Task:

- (a) Determine the average height of students measured.
- (b) Use a suitable graph to estimate the height in which the greatest number of students treated for the infection at school clinic falls.

END