

NAME:.....STREAM:.....SIGN:.....

ST.FRANCIS XAVIER MORDERN SECONDARY SCHOOL.

P. O. BOX 948, KAGADI DISTRICT.

Uganda Certificate Lower Secondary Curriculum.

S3 FUNCTIONAL MATHEMATICS END OF TERM SUMMERTIVE ASSESSMENT.

DURATION: 2 HOURS 30 MINUTES.

INSTRUCTIONS:

- Attempt any five questions.
- All necessary calculations and Illustration must be shown clearly.
- Unnecessary crossing of work and Unclear work will lead to loss of marks.
Poor writings will lead to loss of marks.

EXAMINORS USE ONLY	
NO.	SCORES
1	
2	
3	
4	
5	
TOTAL	

1. In 1978, most of the hospitals in Uganda were filled with patients of Tuberculosis. At Mulago hospital the biggest referrals in Uganda the story was not different. The government embarked all its effort on reducing Tuberculosis through public health and indeed the number reduced tremendously. In 2018,an increase in the level of Tuberculosis amongst hospitals in Uganda was again observed and Mulago being the biggest referral hospital reported a high number of cases.

MATHEMATICS DEPT, ST. FRANCIS XAVIER MODERN SEC SCH:
by Sadrackokello987@gmail.com

The director of Mulago hospital tasked the laboratory technician to provide information on the new positive Tuberculosis (TB) cases, and the table below the findings for 10 consecutive weeks.

57	12	71	83	65	25	51	33	62	54
17	54	19	73	45	70	62	51	94	38
23	44	43	20	40	72	36	43	37	28
64	25	59	60	42	37	41	65	89	57
57	57	45	70	69	78	59	35	57	53

SUPPORT:



TASK:

As a student of statistics, organize the data presented in the table above in a report form clearly indicating the fall and the rise of Tuberculosis cases to the general public in the NEWS PAPER pull out (Use class interval of 10 – 19).

(12 marks)

- A community has been experiencing heavy rains and strong winds, and as a result, there has been many falling trees that caused accidents. St. Francis xavier secondary school community has an old tree, surrounded by four class room blocks.

Support:

The compound master has assessed and confirmed that it is risky to climb the tree to Cut off some branches.

Resources:

Knowledge of trigonometric functions, knowledge of angles of elevation.

Task:

If you are the compound prefect of this school, write a report to the compound Master advising on how to cut down this tree.

3. Mr. Patric Onyango the Kampala Metropolitan police spoke person bought a house at a cost price of UGX.120 million through a bank. She deposited UGX.20 million and paid monthly installments of UGX.1,800,000. If the bank charged an interest of 8% at the beginning of the year on the amount owing.
- Help Mr. Onyango to know when he is required to pay the loan given that the agreement was made on the 1st Oct,2023.
 - The table below shows the tax structure on taxable income of a certain working class of people.

Income (UGX.) per month	Tax rates (%)
0 - 40,000	8.0
40,001 - 100,000	16.5
100,001 - 200,000	24.0
200,001 - 350,000	32.0
350,001 - 510,000	43.0
Above 510,000	48.5

An employee earns UGX.890,000 per month. His allowances are:

Insurance and relief UGX.222,000 per annum.

Water and electricity UGX.21,000 per month.

Medical UGX.318,000 per annum.

Housing allowances UGX.55,000 per month.

Transport allowance UGX.42,000 per month.

Family allowance for three children only. For children age bracket 0 to 10 years ,UGX.14,000 per child. Between 10 to 18 years UGX.12, 000 per child and over 18 years, UGX.9500 Per child.

- Calculate the man's taxable income and the income tax he pays each month given that he has four children aged 6 years,8 years,15 years and 19 years.
- What percentage of his gross monthly income goes to tax?

(12 marks)

4. Mr. Musoke is a residence of Nalyamagonja , a village with only corporate and working class residence picked interest in farming last year .As he was planning on opening up his Irish potato farm ,he discovered that labour inform of human capital is a very serious problem in Nalyamagonja since almost every resident in the village has an office. He is planning on hiring 3 women from a neighboring village to clear an area of 100m² for the first Paddock, the second paddock is 300m² and he is planning to hire 5 women.
- Mr. Musoke has added another 20,000 m² of land on which he wants to plant pineapples.

Support.



Task.

Mr. Musoke need to hire women to work on the extra acquired land to plant pineapples . Help him ascertain the number of workers he needs.

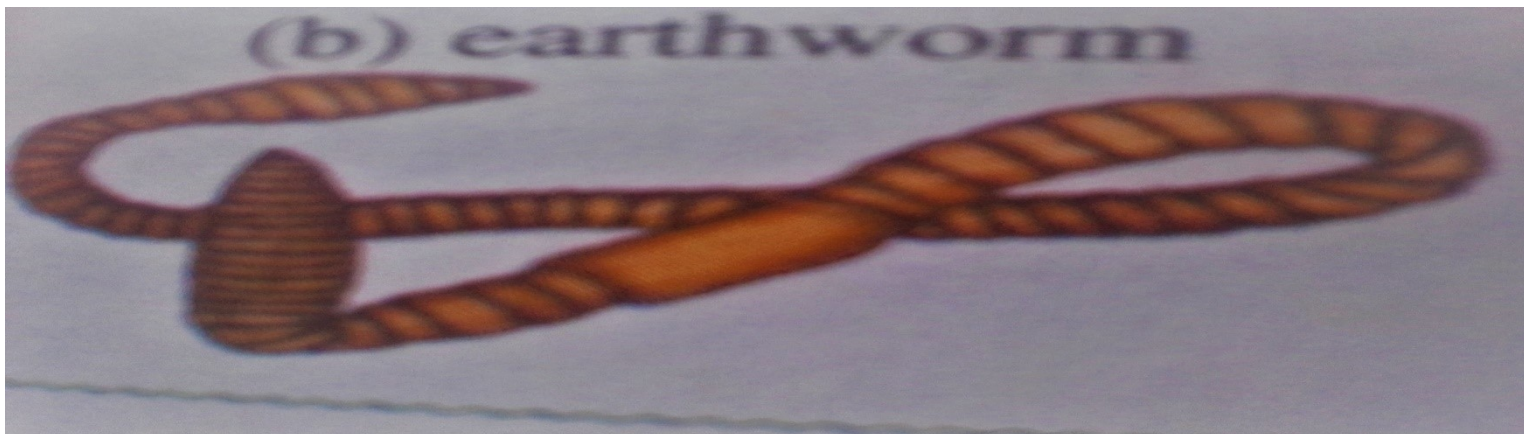
5. The resistance to motion of a car is directly proportional to the square of the speed of the car. If the resistance is 40,000 newton at a speed of 20ms^{-1} ,

Support.



- a) Determine the resistance when the speed of car is 30ms^{-1} , work out also the speed when the resistance is 6250 newton.
- b) In the first few days of its life, the length of an earthworm is believed to be proportional to the square root of the number of hours which have.

SUPPORT: PICTURE OF AN EARTHWORM



-END-