***456/1***

***MATHEMATICS***

***Paper 1***

***1 hour***

**NAME:…………………………………………………………………………SIGN ………… BUJUUKO HIGH SCHOOL**

**SENIOR ONE**

MATHEMATICS

**Paper 1**

1 HOUR

**INSTRUCTIONS TO CANDIDATES**

x Item **one** and item **two** are **compulsory**

x All necessary working and explanations should be written on the answer sheets provided

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| --- | --- | --- |
| FOR EXAMINER’S USE ONLY | | |
| ITEM ATTEMPTED | ITEM ONE | ITEM TWO |
| SCORES |  |  |

## ITEM 1

Your friend wrote His ATM card pin as 149 from number system ten (base ten), he very well knows that whenever He wants to withdraw the money He turns this digit to base three to access the correct pin. He did this in fear of theft. Now that he is sick in the hospital, He can neither talk nor write but the money on his account is need to finance hospital bills. The hospital doctor who takes care of him checks on him after every 180 minutes and a nurse checks on him after every 240 minutes. Both the doctor and nurse last checked on him together at 10:30am. **Task**

1. What do you think was the correct ATM pin
2. At what time did both the nurse and doctor check on the patient again together?

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**ITEM TWO**

Two twins A and B where presented with an abacus to write the number on it. A wrote one thousand fifty-five and the other wrote one thousand fifty-one. They need your help to know who amongst them is correct. **The abacus:**

**5**

**4**

**5**

**3**

**5**

**2**

**5**

**0**

Twin A was sent to buy 2kg of sugar. He did not find sugar at the usual shop so he bought it at another shop and was given a balance of Ugx.37,000 on the Ugx.50,000 he went with. The mom asked him how much he was charged for each Kg but unfortunately, he did not ask the shop attendant.

Both twins have to go to school. They usually pay 60% of the school fees at the beginning and the rest on Visitation day according to school policy. School fees for each student was increased to Ugx.600,000 and now the parents need to know the school fees they are to pay for both of them at the beginning.

## TASK:

1. Who amongst the two twins was correct about the number presented on the abacus?
2. How much was Twin A charged for a kg of sugar?
3. How much will the parents pay at the beginning for both twins?

**ITEM 3**

A woman whose husband lives abroad has been sent money for their two children with instructions on how to spend the money. She has received two million three hundred and eighty thousand shilling only with 40% to be used for the son’s fees and ½ of the remainder on the daughter’s fees, ugx 100,000 is to be used for transport to school and the rest given to the children for their shopping. She has asked you for help on how to allocate the money as instructed but she decided that she would give the children their total amount for them to shop for what they want.

Of the children, the girl asks her brother that they should play a game where the winner will get 3 parts while the loser gets 2 parts of the shopping money. The girl has her card with the number 7 and asks the brother to randomly pick a card out of five cards each with digits in binary base. He is required to convert the number on his card to decimal

base. If his number turns out to be greater than that of her sister then he wins. The boy picks a card with the number 1101.

**Task**

(a) Show how you can help the woman to determine the different amount as she has been instructed.

(b) Who of the children will get the most amount of pocket money and how much will it be?

# EnD

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