

Senior one and two end of cycle sample questions  
Number bases

**Question 1**

Karyn owns a bakery in Kampala. She uses a base eight system to display the prices of different prices of bread in dollars. In her display, each digit from 0 to 7 represents a specific price value as shown in the table below

Digit	Price value in dollars
0	2.5
1	3.0
2	3.5
3	4.0
4	4.5
5	5.0
6	5.5
7	6.0

She sells each loaf of bread at 256 base eight. Oscar is a business man who buys 100 loaves of bread daily from the bakery and sells each loaf at UGX 70000. He is given a discount of 5% on every loaf of bread.

**Task**

- Determine the price of 1 loaf of bread in dollars
- Given that  $1\text{USD} = \text{UGX}3800$ , Help Oscar to determine his percentage profit.

**Question 2**

Your mathematics teacher has promised to award his best three students Maria, Monica and Mariam with 126 counter books. Each counter book costs UGX12000 in the market. Maria will receive 42 counter books in base 6. Monica will receive 36 counter books in base 8. Mariam will receive the share of her counter books in base 10. To provide accountability to the school head teacher, the mathematics teacher intends to present the data on appropriate chart to the head teacher.

**Task**

- Determine how much money was spent in buying Mariam's Counter books
- Help the teacher to present the data to the school head teacher.

**Question 3**