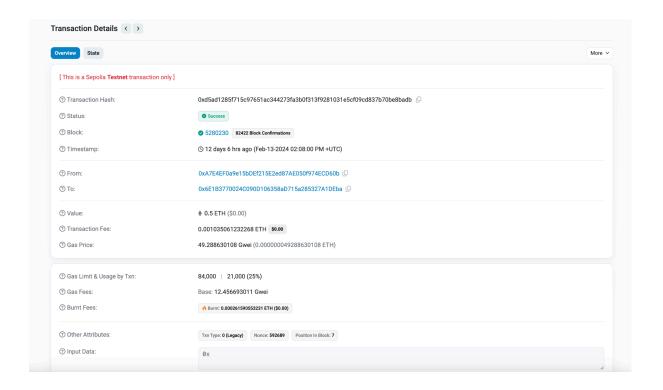
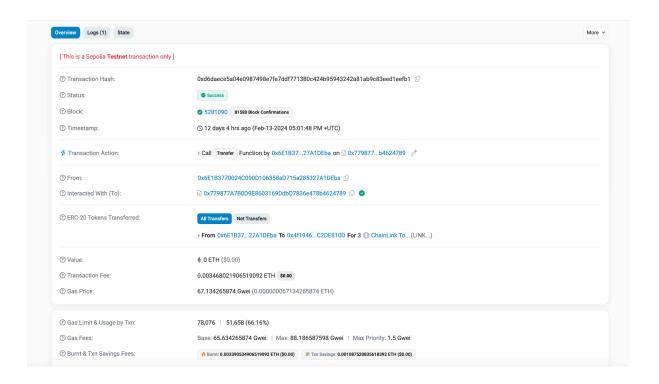
## Homework 3 Exercice 1 Part D

Here are some scan photos regarding Exercice1 transactions:





By looking at these scan photos, we could know how much gas is used per random number request, how much I have to fund the initial contracts and reflect on the speed at which my Metamask wallet estimated these costs and performed the transaction.

Now let me draw a conclusion on the current technical challenges in blockchain and what needs to be improved in the future of blockchain.

The main technical challenges currently faced by blockchain technology include high transaction fees (Gas fees), slow transaction processing speed, and blockchain scalability issues.

In order to overcome these challenges, we needs to improve in the following aspects:

- 1. We should reduce user transaction fees by optimizing blockchain protocols or adopting layered solutions (such as lightning networks, side chains, etc.). It can allow blockchain technology to be more widely used in micropayments and daily transactions.
- 2. We should improve the processing speed and transaction throughput of the blockchain network by improving the consensus mechanism, optimizing the network architecture, or adopting sharding technology to meet the needs of large-scale applications.
- 3. We should develop more efficient data structures and algorithms to improve the scalability of the blockchain network so that it can handle more transactions and data.
- 4. We should develop more secure encryption algorithms and privacy protection technologies to protect user data from leakage and abuse.