

## THE THIEVES OF BAGHDAD

Once upon a time, in the city of Baghdad, there was a servant who served a rich merchant. One day, early in the morning, the servant went to the market to do the shopping. But that morning was not like all the others, because that morning he saw the Death there and because the Death gestured to him. .



Shaken, the servant came back to the merchant's.

- Master - he said - lend me the quickest horse in the house.

Tonight I want to be far away from Baghdad. Tonight I want to be in the far-off city of Ispahan.

- But, why do you want to flee?

- Because I have seen the Death in the market and she has done a gesture of threat to me.

The merchant took pity on him and he lent him the horse, and the servant started off with the hope of being in Ispahan at night.



In the evening, the merchant himself went to the market and, as it had happened to his servant, he also saw the Death.

- Death - said to her while approaching - why have you done a gesture of threat to my servant?

- A gesture of threat? - the Death replied - No, it was not threat, but astonishment. I was surprised of seeing him, so far from Ispahan, because tonight I must take your servant in Ispahan.

The servant arrived at Ispahan with the first stars and he began to knock in all the houses, asking for shelter. But those people were frightened when hearing the word Death and they closed the doors to him.

The servant went all over the streets of Ispahan during three, four, five hours, knocking the doors and getting tired in vain. Shortly before dawn, he arrived at the house of a man who was called Kalbum Dahabin.

- The Death has done me a gesture of threat this morning in the market of Baghdad and I fled from there. I beg you, give me refuge.

- If the Death has threatened to you in Baghdad - said Kalbum Dahabin to him - she will not have remained there. She has followed you to Ispahan, take it for sure. She will already be within our walls, because night is coming to an end.

- Then, I'm done! - the servant exclaimed.

- You are not still hopeless - Kalbum Dahabin answered - If the Death has decided to take you tonight and she doesn't get her purpose, she will never be able to take you. This is the law.

- But, what should I do? - the servant asked.

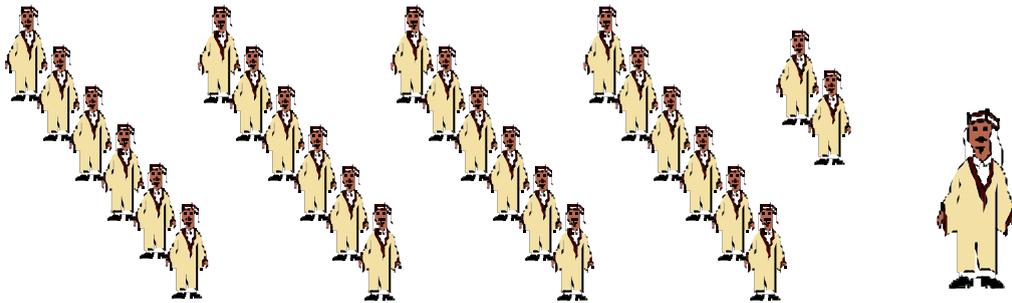
- Let's go the sooner to the store I have in the square - Kalbum Dahabin ordered, closing the door of the house behind him - You have been lucky you found me. From this house comes up a cave that can be your salvation. I do not assure the life to you but at least, you will have your opportunity.



Meanwhile, the Death was approaching the doors of the wall of Ispahan. The sky of the city was getting light.

- Dawn will arrive in a short time - the Death thought-. I must hurry, otherwise I will lose the servant.

She finally came in Ispahan and sniffed around among the thousands of scents in the city looking for what she wanted to take. She immediately



found the servant's hiding place: he was in Kalbum Dahabin's store. A minute later she was already running towards that place.

In the meanwhile, the servant had come in the cave and he was there with 26 more people, fleeing from the Death like himself.

From the cave there were **three paths**: one of them lead to the outside in one hour. If they were able to find this way they were saved. The two other remaining paths did not have an exit; if they came in by one of them, they would return to the cave in two days; if they did it by the other one, they would return in three days.

As they did not have any light and the cave was dark and full of obstacles, they would have to choose one of the three paths at random, in each attempt of reaching the exit.

The Death arrived at Kalbum Dahabin's store. She suddenly opened the door and... in her face appeared a strange face, mixture of rage and satisfaction. In that store she saw the cave whose entrance was forbidden



to her. She would not take them all, but she knew that those who entered the cave, if they did not find the exit, would die of hunger, thirst and desperation after 5 and a half days. Some would voluntarily appear before the Death and they would save her the work to look for them.

How many of these 27 people who are in the cave do you think that will be saved?. More clearly: Which is the most probable number of people that will be saved?

To answer this question we are going to simulate the problem using 27 counters (each counter representing a person). The movement of every counter/person will not be finished until freedom or death.

~~✍~~ Of the 27 people, how many of them are expected to take any of the three paths? Move the counters to the corresponding position.

~~✍~~ The same way, analyze now, but separately every group of counters/people.

People who took the A path, which will take them to the exit in an hour, are saved.

People who took the B path come back to the cave after 2 days. Of all of them, it is thought that ..... will take the A path, ..... the B and ..... the C path.

~~✍~~ How many of them are likely to be saved if they were 18? And if they were 54?

✂✂ If there were an undetermined number of people, what proportion of them are likely to be saved?

✂✂ Which probability would the servant have to be saved if the Death found him? Which probability does he have of being saved after coming in the cave?

**YOU WILL NEED:**

27 counters, a board, a pencil and a blank sheet.