

## November 7: Logic

To solve logic puzzles it helps to think about all the possibilities and to make tables.

1. A drawer has 24 red socks and 24 blue socks all mixed together. I am trying to get dressed in the dark. What is the least number of socks I need to get from the drawer so that I am sure to have a matching pair (two socks of the same color)?
2. What if I am trying to find socks for my younger sister too? What is the least number of socks so I am sure to have two matching pairs?

On the island of Logica, there are Knights and Knaves. Knights always tell the truth, and knaves always lie. Can you tell who is who?

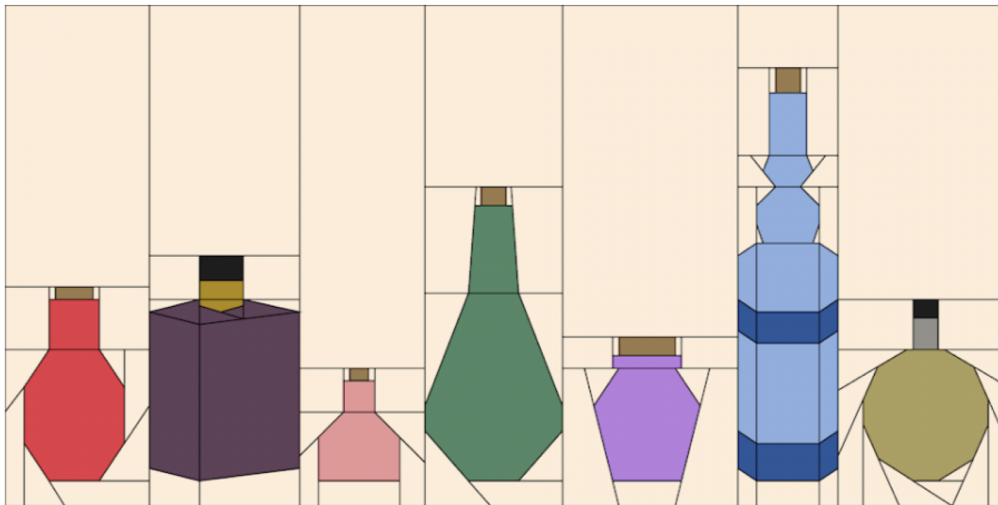
2. Alice says "Bob says he is a knave." Is Alice a knight or a knave?
3. Bob says about himself and Carol, "At least one of us is a knave." Is Bob a knight or a knave? Is Carol?
4. Amy says: "Either I am a knave or Bill is a knight." What is Amy? What is Bill?
5. There are three people, Aidan, Barb and Cathy. Aidan says: "All of us are knaves". Barb says: "Exactly one of us is a knight." What is Aidan? What is Barb? What is Cathy?

6. From Harry Potter and the Philosopher's Stone: where is the potion to move ahead?

"Danger lies before you, while safety lies behind,  
Two of us will help you, whichever you would find,  
One among us seven will let you move ahead,  
Another will transport the drinker back instead,  
Two among our number hold only nettle wine,  
Three of us are killers, waiting hidden in line.

Choose, unless you wish to stay here for evermore,  
To help you in your choice, we give you these clues four:

First, however slyly the poison tries to hide  
You will always find some on nettle wine's left side;  
Second, different are those who stand at either end,  
But if you would move onwards neither is your friend;  
Third, as you see clearly, all are different size,  
Neither dwarf nor giant holds death in their insides;  
Fourth, the second left and the second on the right  
Are twins once you taste them, though different at first sight"



<http://owlsea.livejournal.com/22390.html>

7. You stand at a pair of doors with two guards. The guards will prevent you from opening more than one door, but behind one of the doors is a deadly trap and the other has a fabulous treasure. Fortunately, you may ask one of the guards one question and they will answer. Unfortunately, one of the guards is a knight and the other is a knave, and you don't know which is which. What question can you ask to determine which door has the treasure?