房間裡有三個袋子,一個只裝鉛筆,一個只裝原子筆,第三個有鉛筆也有原子筆。

袋子是不透明的,單從袋子的外表上看不出任何差異,你不知道哪個袋子裝什麼。

除了袋子上各貼了一個標示("鉛筆"、"原子筆"、"混和"),且標示都是錯的

(e.g. 標示鉛筆的袋子可能是混和的或是只裝原子筆) 。

你只能選一個袋子,拿出裡面一支筆,看是鉛筆還是原子筆,然後你要推論出這三

個袋子分別的情況。請列出你的作法,以及解釋為什麼這樣可以找到答案。

Given: 3 wrongly labeled bags containing either pencil, pen, or both.

To do: choose 1 bag and take whatever is inside and determine the actual situation of the 3 bags.

Solution:

Since the bag containing both pencil and pen can be confusing and will affect the actual reasoning, I will choose to open the bag labeled “both”. The reason is that we are guaranteed that all 3 bags do not contain the things they are labeled with, so now there is 2/3 possibility to get the right answer and conclusion. Then, the last step I need do is to take out whatever is inside the bag, put the accurate label on the bag I chose, and exchange the labels left between the other two bags that I didn’t choose. In other words, I choose to open the bag with “both” labeled on it. I am given from the question that it is for sure not containing both pen and pencil, so the bag labeled “both” can contain either pen or pencil. Then, if I take out a pencil from the bag, I can conclude that the bag labeled “both” is actually containing pencil; for the other two bags that I didn’t choose to open, I can accurately conclude what they actually contain by switching their labels which is “both” and “pen”. For example, if one of the bags I didn’t open labeled with “pen”, then it actually contains both; if the other bag I didn’t open labeled with “pencil”, then it actually contains pen.