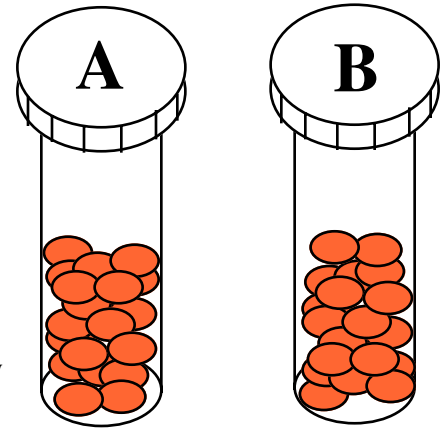


Problems in Reasoning 2

1. A doctor gave a patient two bottles of pills for his illness. They were labeled “A” and “B.” The two bottles contained different medications, but the pills looked identical. There were ten pills in each bottle. There was no way to tell the medications apart by looking at the pills. He was to take one pill from each bottle every day with dinner. He was told also that it would be harmful for him to take more than one or less than one of each pill on any day. It was essential that he take exactly one of each every day for ten days.



One day when he was pouring pills from each bottle into the palm of his hand, he accidentally poured two pills from bottle “A.” Unfortunately, he couldn’t tell which came from bottle “A” and which came from bottle “B.” He couldn’t discard the three pills and get more, so he had to find a way to be sure that he takes one pill of each medication. How did he do it?

2. You are opening a New Deli and you plan to sell cold cuts weighed by the ounce. You cannot afford an electronic scale, so you plan to use a balance scale. You want to be able to weigh any number of ounces from 1 ounce to 40 ounces in one weighing.

When you go to buy weights for your scale, you are told that every weight costs \$10, regardless of the number of ounces in the weight. If you buy one of every weight, you will spend \$400. You decide to be economical. You buy the smallest possible number of weights that you will need.

How many weights **MUST** you buy and what are they? Explain the line of thought that led to your answer (unless you just guessed).

3. Arnold and Phil were planning an 8,000 mile automobile trip across the country. However, the mechanic told them that their tires would only last 4,000 miles. They had a new spare tire in the trunk, but since they had little money, they wanted to buy as few new tires as possible.

What is the smallest number of tires they **MUST** buy to complete their trip?