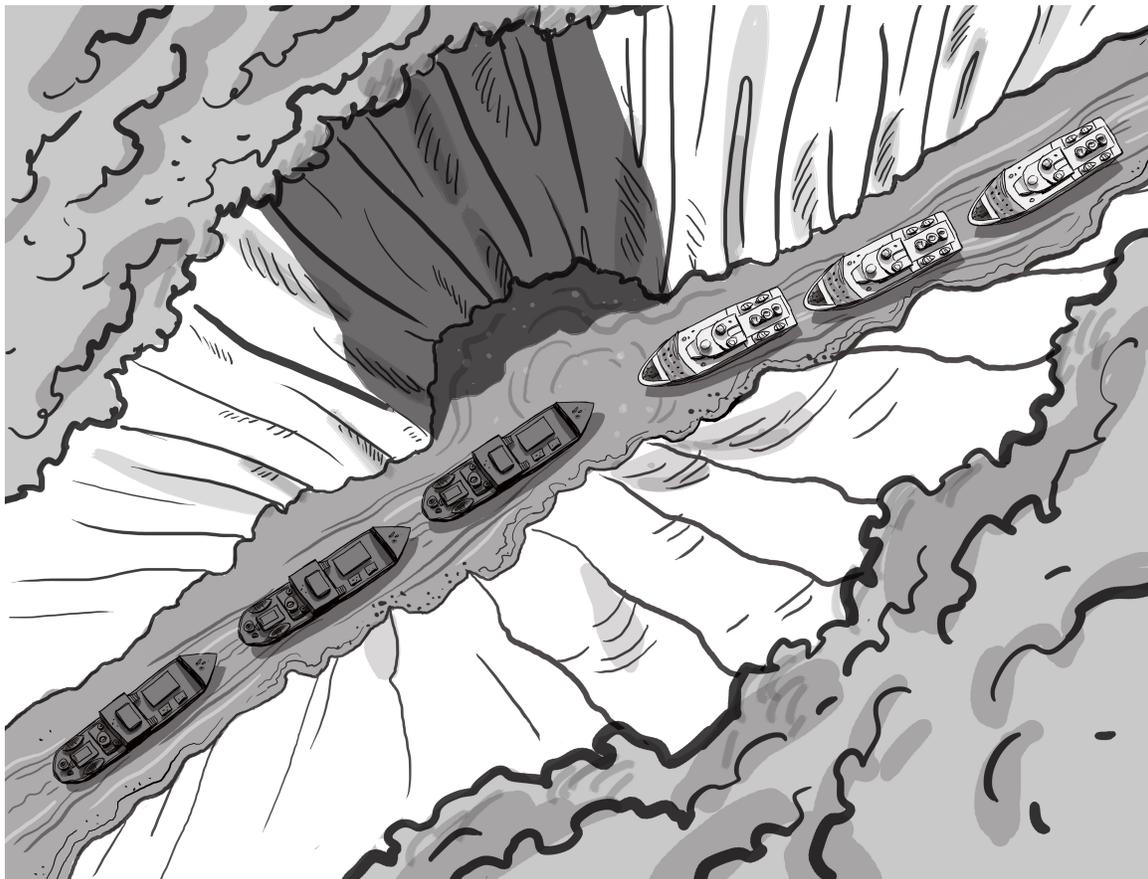


Problem 1 *In a ten-story building, one person lives on the first floor, two people live on the second floor, three people live on the third floor, and so on up to the tenth floor where ten people live. At which floor does the elevator stop the most? Why?*

Problem 2 *Six ships are making their way through a channel. Three cruise ships, the white vessels in the picture below, need to move right to left. Three cargo ships, the dark-gray vessels in the picture below, need to move left to right. The channel is so narrow that the ships cannot pass one another, except for a small bay that can house one ship only. The ships can move forward and backward. Can all the cruise ships pass all the cargo ships?*



Problem 3 *A doctor prescribes a patient seven pills and tells her to take one pill every hour. How long will the treatment take from the moment the patient takes the first pill to the moment she takes the last?*

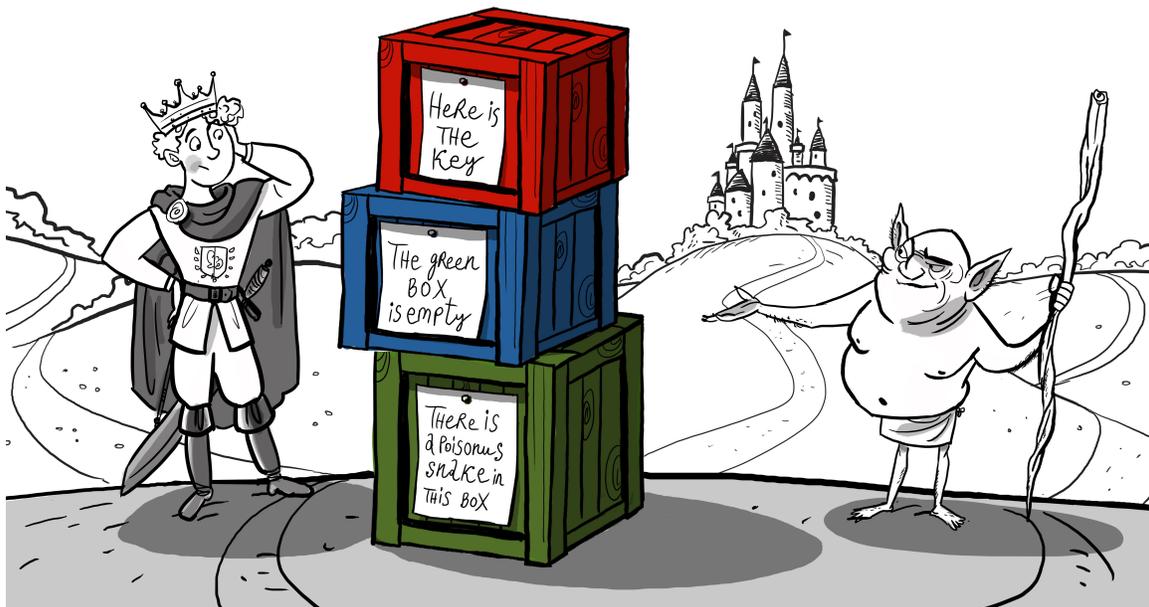
Problem 4 *Two pirates have to share a treasure. The treasure is made of objects very hard to compare in value – gold and silver coins, jewellery, precious stones, and so forth. If one pirate suspects the other of trying to take more than his fair share, they'll draw their swords and start a fight. Find a way to divide the treasure that will keep both pirates happy and prevent a brawl.*



Problem 5 *Adam's age is the smallest number written using two digits. How old is Adam?*

Problem 6 *The age of Adam's grandpa is the largest number written using two digits. How old is the grandpa?*

Problem 7 *A prince traveling through a magic land found an enchanted castle guarded by an evil goblin. The goblin told the prince that he had a box with the key to the castle gate, but that it was very dangerous to open the box. The prince immediately accepted the challenge. The goblin presented the young man with three boxes: red, blue, and green. On the red box was written, "Here is the key." The blue box read, "The green box is empty." The green box had a warning, "There is a poisonous snake in this box." "Ha-ha-ha", laughed the goblin, "it is true that one of these boxes has the key, one is home to a deadly snake and one is empty, but all the labels on the boxes lie. You can only try once. If you open the empty box, you go home empty-handed and if you open the box with the snake, you are dead!" Help the prince choose wisely.*



Problem 8 *A floor lamp has two light bulbs and three buttons on the base. One of the buttons switches one bulb on and off, another button switches on and off the other bulb. The third button turns both bulbs on and off at the same time. One of the bulbs have burnt out. A manual for the lamp is lost. Can a person unfamiliar with the lamp figure out which bulb needs to be replaced?*



Problem 9 *Mother cooked a few raspberry tarts. Alice ate half the tarts and one more tart. Bob ate half the remaining tarts and the last tart. How many tarts did Mother cook? Hint: draw the tarts.*