**1.** On the river bank in Littletown there is a pier that is 150 feet long. A 30 ft long boat passes it in 10 seconds while going with the current, and in 15 seconds - if going against the current. How many seconds will it take a paper boat to go from one end of the pier to the other?

2. If $a * b = 10 \times (b - a)$, what is the value of $(1 * 2) * (3 * 4) * 5$?

3. The code lock has 4 digits. Teddy is creating a password for this lock. He does not like digits 6 and 9, so he does not use them. In addition, he does not like when two identical digits stand one after another. And he decided that the first digit should coincide with the last one. How many combinations need to be sorted through to guess Teddy's code?
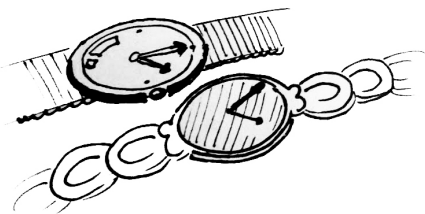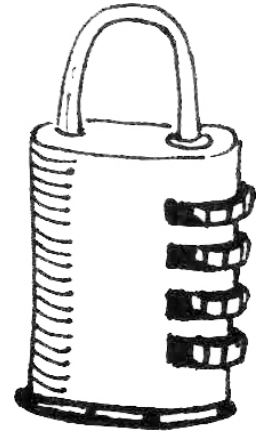
4. Jack's watch runs 3 minutes fast per hour, and John's watch runs 4 minutes late per hour. At noon, they set their watches according to the school clock (which is accurate) and agree to meet at the skating rink at half past three. How many minutes will Jack wait for John, if each comes to the skating rink exactly at 3:30 PM according to his watch?

5. A family approached a bridge at night. The father can cross it in 1 minute, the mother in 2 minutes, the child in 5 minutes, and the grandmother in 10 minutes. The bridge can only bear the weight of two people at a time. They have one flashlight, and they are not allowed to go across the bridge without the flashlight or to light the way from a distance. If two people are crossing the bridge they move with the slowest of their two speeds. How can they cross the bridge in the shortest time? Indicate this time and their plan of action.