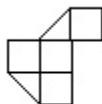


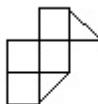
Session 5. Problem Set.

1. Nine digits 1 2 3 4 5 6 7 8 9 are written on the board. Could you insert some “ \cdot ” and “ $+$ ” signs in between the digits (three signs total) in such a way as to get number 100 as the result?
2. Cut each the following shapes into two equal parts

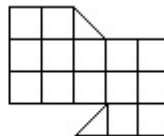
a)



b)



c)



3. A merry cricket jumps along the number line. On every jump, he leaps 1 meter to the right or 1 meter to the left. The cricket starts at the point with the coordinate 20. Could it be that in 33 jumps he will end up at the point with the coordinate 10?



4. An Egyptian sphinx plays a game with you. He hides two coins under his right and left front paws. One is a 15-dinar coin, and another one is a 10-dinar coin. He plays the game as follows: he multiplies the value of the coin under his right paw by either 4 or 6, and he multiplies the value of the coin under his left paw by either 3 or 5. Then he adds these two numbers, and tells you the result. You should make a guess about where the 10-dinar coin is. If your guess is correct, you get an access to the treasures. If it is wrong, you die. Do you think you have a way to survive the ordeal?



5. Can you square into 8 smaller squares? If yes, then show how to do it. If not, explain why this is not possible. When counting, make sure that you don't count the big squares that are composed from smaller squares.