1. Suppose a standard  $8 \times 8$  chessboard has two diagonally opposite corners removed. Is it possible to place 31 dominoes of size  $2 \times 1$  so as to cover all of these squares?



2. There are five possible tetrominoes



Is it possible to form a rectangle with the five tetrominoes (one of each)?

- 3. Can a  $10 \times 10$  chessboard be covered by 25 straight tetrominoes?
- 4. Can an  $8 \times 8$  chess board be covered by 15 square tetrominoes and one straight tetrominoes?
- 5. Consider an  $n \times n$  chessboard with the four corners removed. For which values of n can you cover the board with L-tetrominoes?
- 6. Divide these shapes into 4 identical pieces.



7. Divide this shape into 2 identical pieces:



- 8. Can you divide a square to 5 identical pieces?
- 9. A  $6 \times 6$  square is tiled by dominoes. Then it always has a fault-line, that is, a line cutting the square without cutting any dominoes.