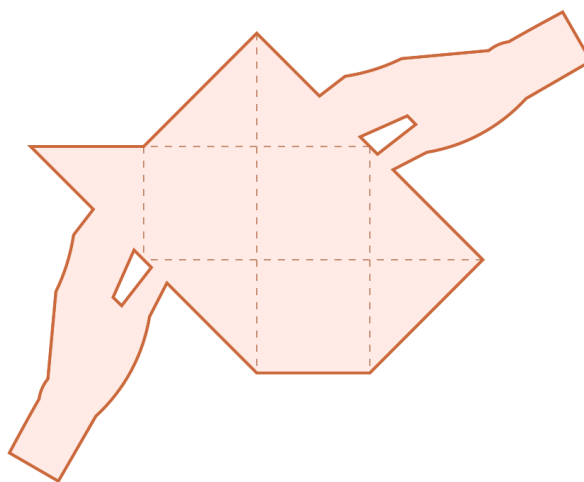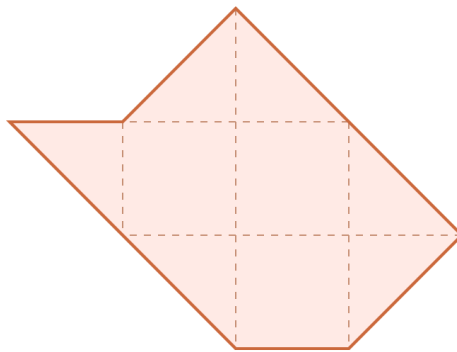# Han Dongkyu's Puzzles

Librarian's Nightmare

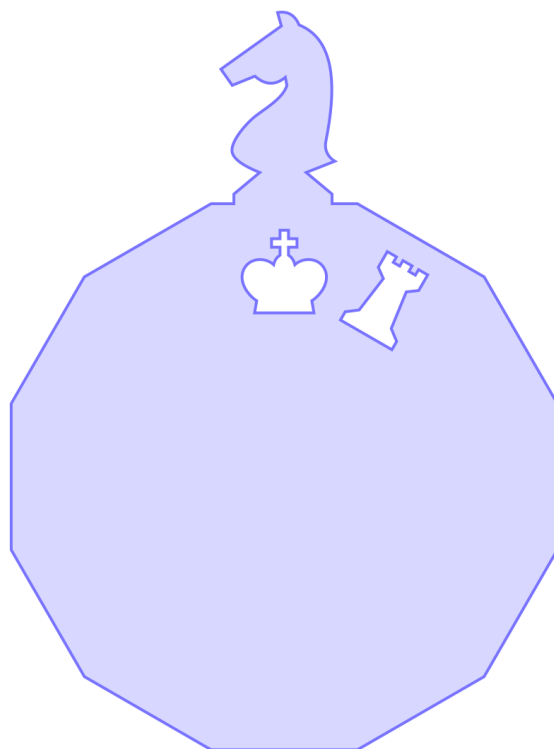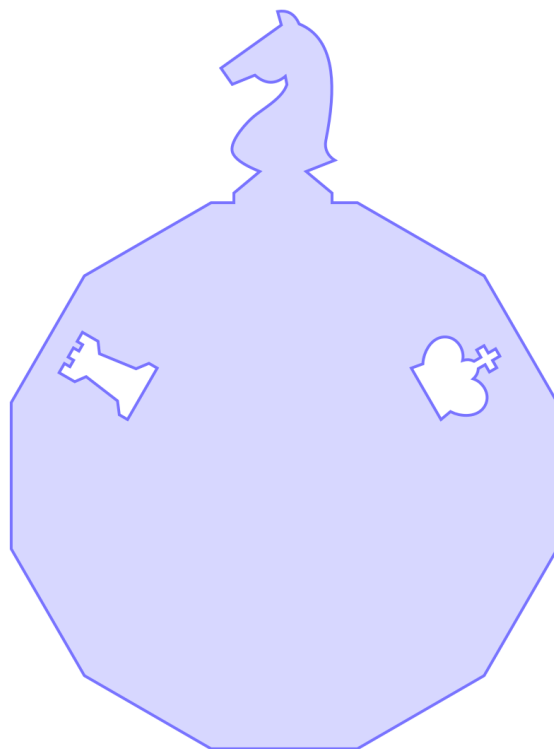Once upon a time, a royal librarian had a nightmare where books were being torn into pieces...

1. Divide the open book shape into two identical pieces.
2. Now divide it into three identical pieces.
3. A person is reading a book. (Or are they?) Divide the book shape with hands into two identical pieces.
4. *Bonus challenge:* There is another way to divide the book shape (without hands) into two identical pieces. Can you find it?

The dotted lines are drawn only to indicate the dimensions of the shape.

Castling

Cut the first shape (before castling) into two pieces and rearrange them to make the second shape (after castling). The pieces can be flipped.

Hints

Librarian's Nightmare

Hints for each sub-puzzles

1. (No hints)

2. Try to ignore the dotted lines. It's simpler than you think!

3.
   - The two hands belong to different pieces. You can mirror one hand and shift it to match another hand. It means you can mirror one piece and shift it to match another piece.
   - Which portion of the shape can belong to the right piece? Which portion cannot belong? The area that cannot belong to the right piece should belong to the left piece.
   - Once you figure out the shape of the area that should belong to the left piece, you know that the same shape, mirrored and shifted, belongs to the right piece. Repeat this process.
4. The positional relation of the two pieces is similar to the positional relation of the hands in the third puzzle. They are mirrored about the same axis but shifted by a different amount.

Castling

Step-by-step hints

1. One of the two pieces completely encloses another piece.
2. The inner piece is shaped like a small dodecagon with some chess pieces attached to it.
3. You can rotate or flip the inner piece to move the rook-shaped hole, for example. A rook attached to the inner dodecagon can fill the rook-shaped hole and leave another hole in its original position.
4. What happens if there are more than one rook and king?