Exercise 19   5min

A conference table is made up of five 2 m squares and four isosceles right-angled triangles side by side, as shown in the figure.

1   Justify that polygon ABCDEFGH has eight sides and eight equal angles but is not regular.

2   Calculate the perimeter and area of this table.

3   We're considering replacing this table with a round one, 6 m in diameter.
        Calculate the perimeter and area of this new table.

Exercise 20   15min

A rose window in the "Temple de Diane" in Nîmes consists of a regular hexagon surrounded by six squares and six triangles. Together, they form a twelve-sided polygon (dodecagon)

1   Let's consider the rotation with center O that brings point A to point B.
        What are its angle and direction?

2   *Prove the equality ∠SAG = 60°.*
        What can we deduce for triangle SAG?

3   Is the resulting dodecagon a regular polygon?
        Is its perimeter twice that of hexagon ABCDEF?