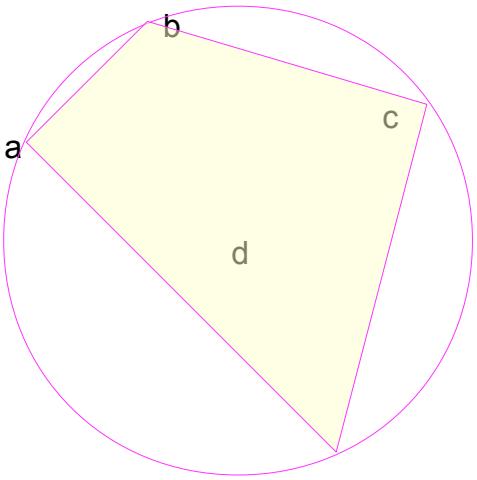
EXO3



1 - A quadrilateral (a b c d) is inscribed
into the circle of radius r. Its area A is an integer.

We only seek for integer solutions (a b c d A)
Find all integer solutions (a b c d A) with :

$$0 < a \leqslant c < d < 11$$

You must check at least 1 or 2 solutions

Find a solution such that $0 < a \neq b \neq c \neq d$

2- Find 3 different rectangle triangles (with all 9 sides different) and with the same integer area

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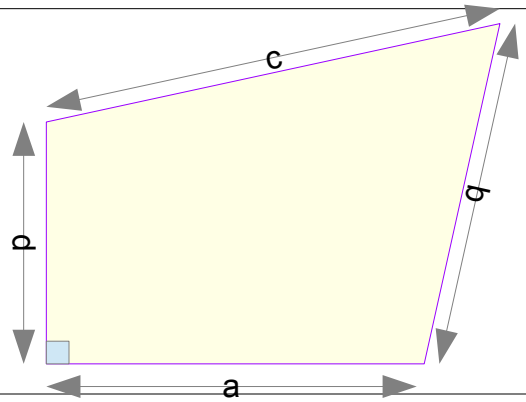
3- This quadrilateral has 4 integer sides
which are known (a, b, c, d) as well as a 90° angle.
Find its area A.
Find all Heronian quadrilaterals with a 90° angle
for : $0 < b, d \leqslant a, c < 15$



4- This rectangle is only composed
of squares. The orange one is a 2x2
square.
Find the size of the rectangle