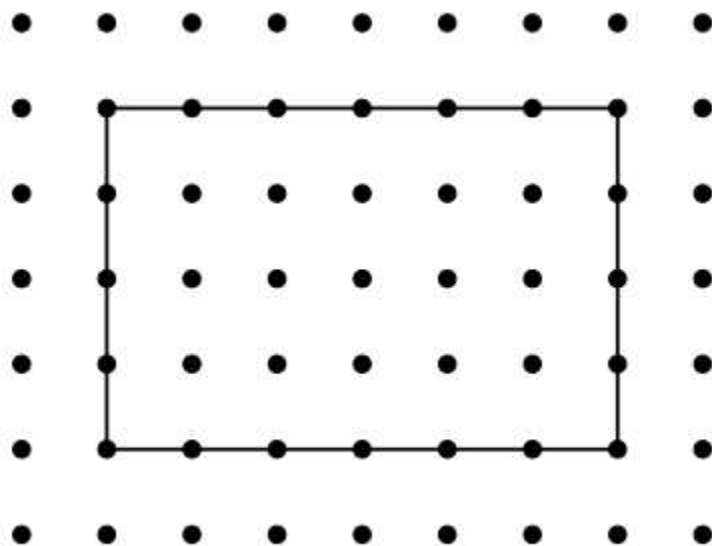
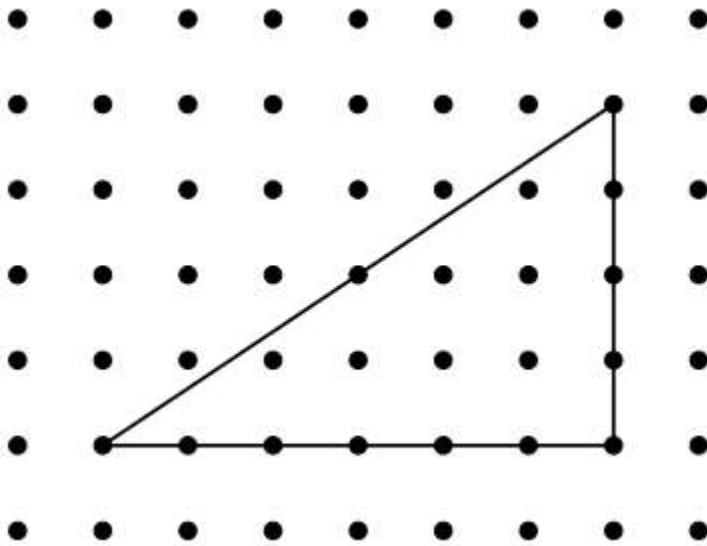


1. Let's try to understand the reason your formula works. First let's check that it is correct for the rectangle shown.



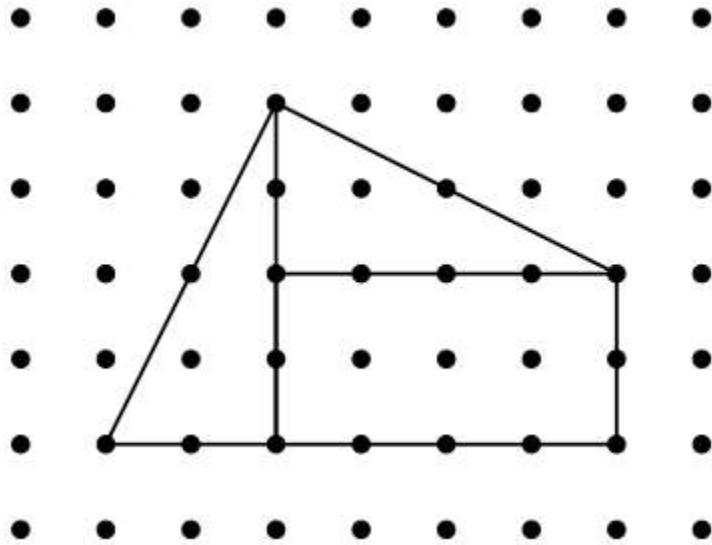
Can you show that your formula gives the correct answer for any rectangle with side lengths m and n ?

2. Now let's check that it is correct for the triangle shown.

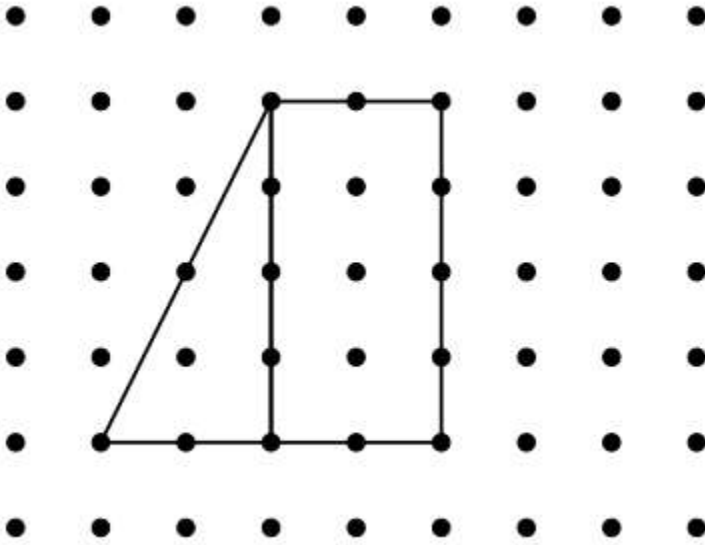


Can you show that your formula gives the correct answer for any triangle like that, with leg lengths m and n ?

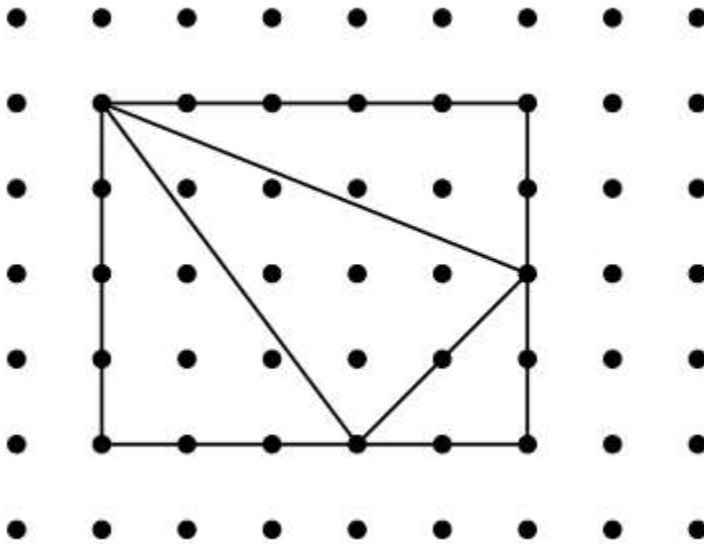
3. Look at this shape that is made by gluing together rectangles and right triangles. What other kinds of shapes can you make this way?



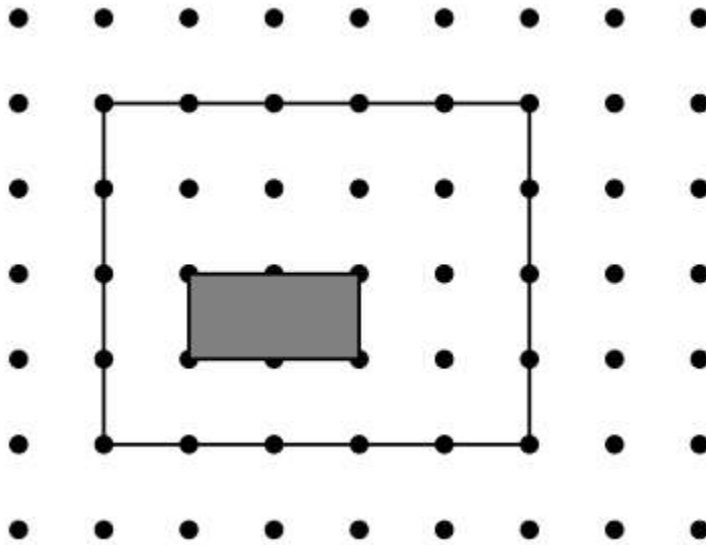
4. Take just two polygons P and Q and glue them together on one edge to get R. If your formula works for P and works for Q, can you show it must work for R too?



5. If you have a triangle that isn't a right triangle, you can still fit it inside a rectangle. Notice that the rectangle is broken up into regions where you know your formula works. How can you conclude that your formula works for the new triangle too?



6. What if your polygon has a polygonal hole cut out of it? Make a conjecture for how this would affect the formula.



What if your polygon has two polygonal holes cut out of it? Make another conjecture.