

So... how many triangles are there on a geoboard?

It is hard to work out because there are so many!

For now, we will ignore the middle pin.

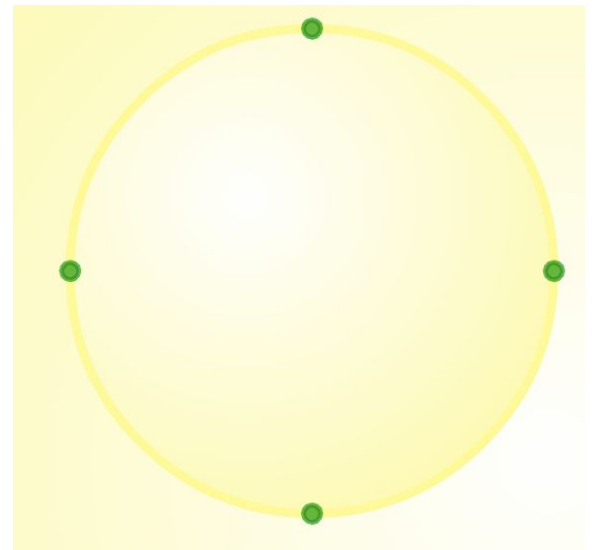
A good way of solving a problem is to make it more simple.

4 pins

So, why not try a board with just 4 pins?

How many **different** triangles can you make on here?

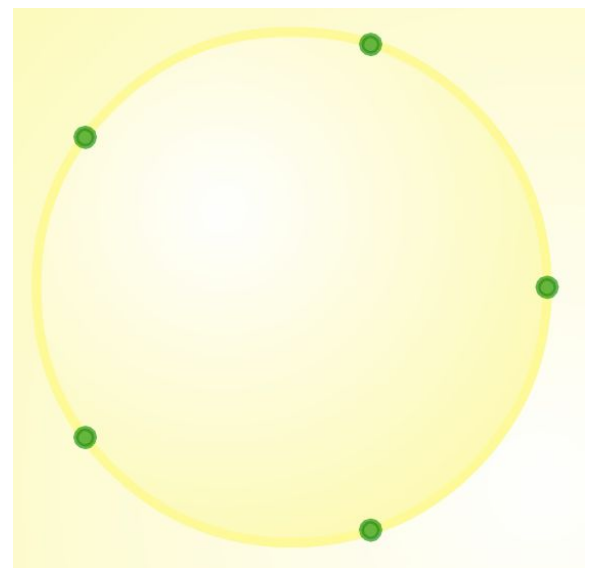
Draw them all.



5 pins

Now try a 5-pin board.

How many different triangles on here?



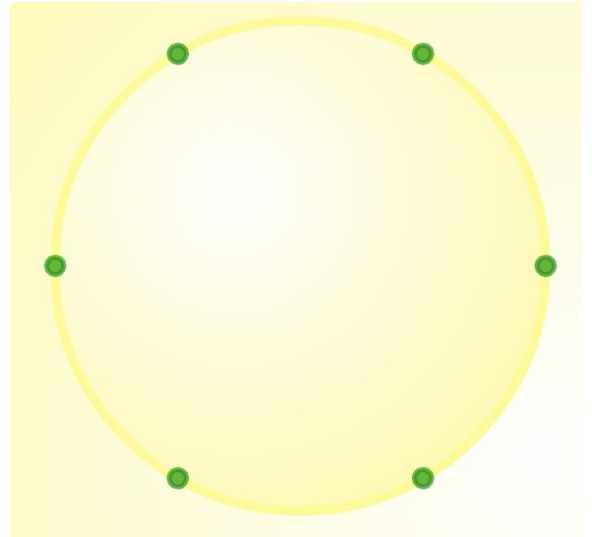
Guessing

Before trying it, can you **guess** how many triangles there will be on the 6-pin board?

6 pins

Find out if your guess was correct.

Try to make sure you have found **all** the different triangles.



Guessing

How many triangles do you think there will be on the 7-pin board?

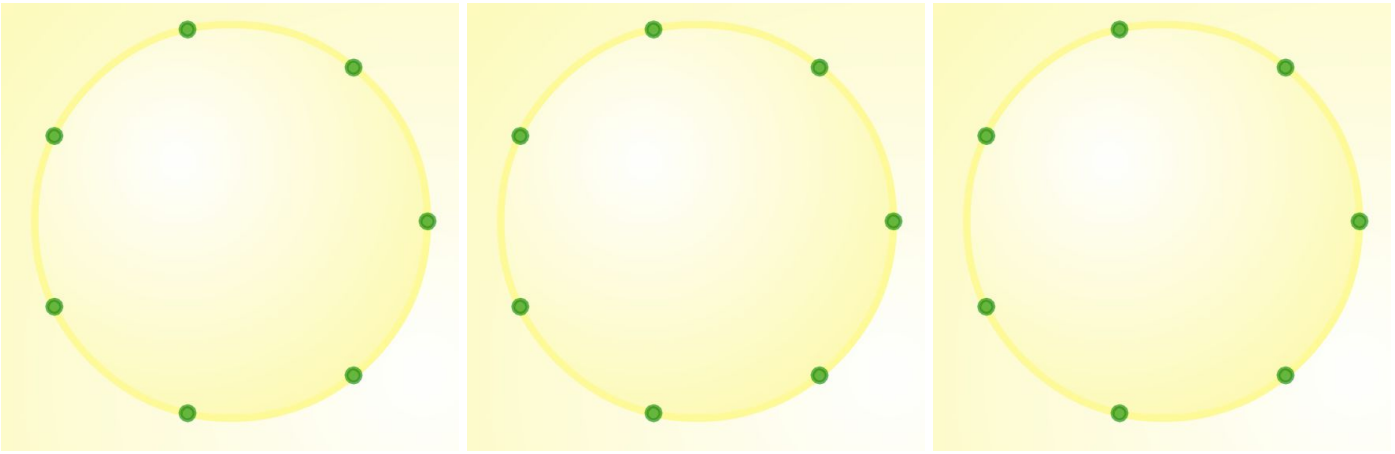
On the 8-pin board? On the 9-pin board? On the 12-pin board? On the 18-pin board?

Make some guesses:

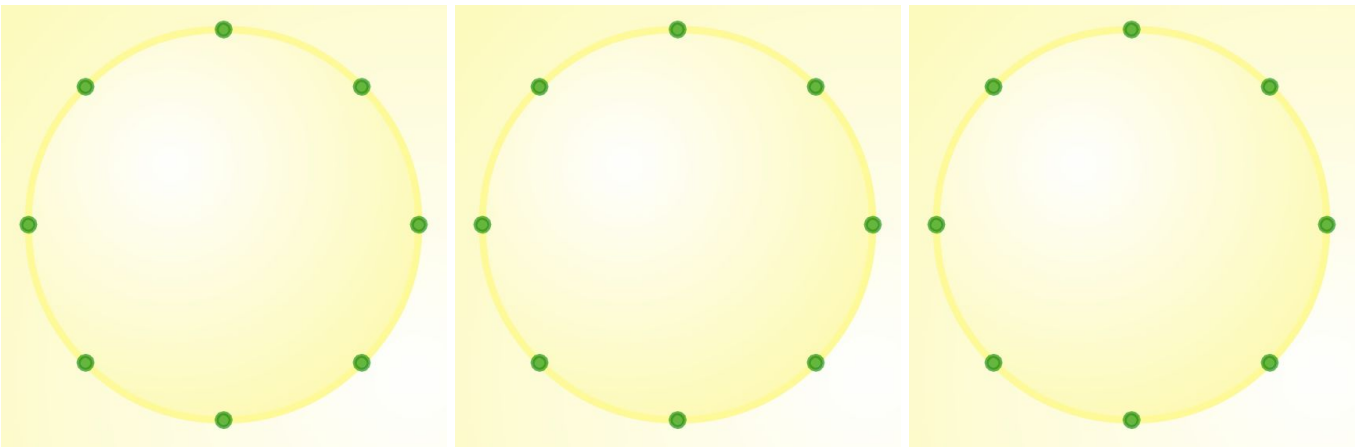
7 pins?	8 pins?	9 pins?	12 pins?	18 pins?

When you have made your guesses, try and find them...

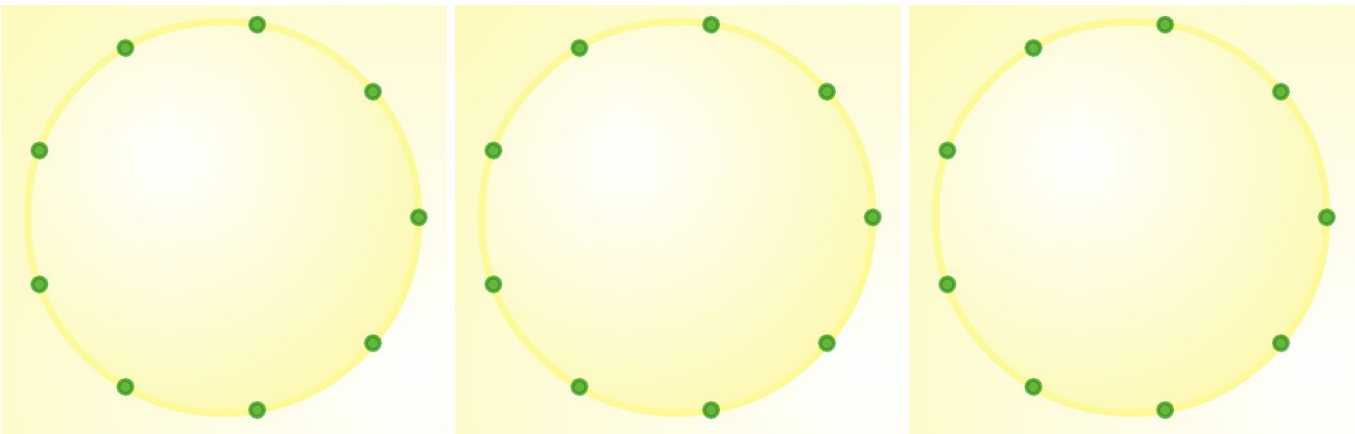
7 pins



8 pins

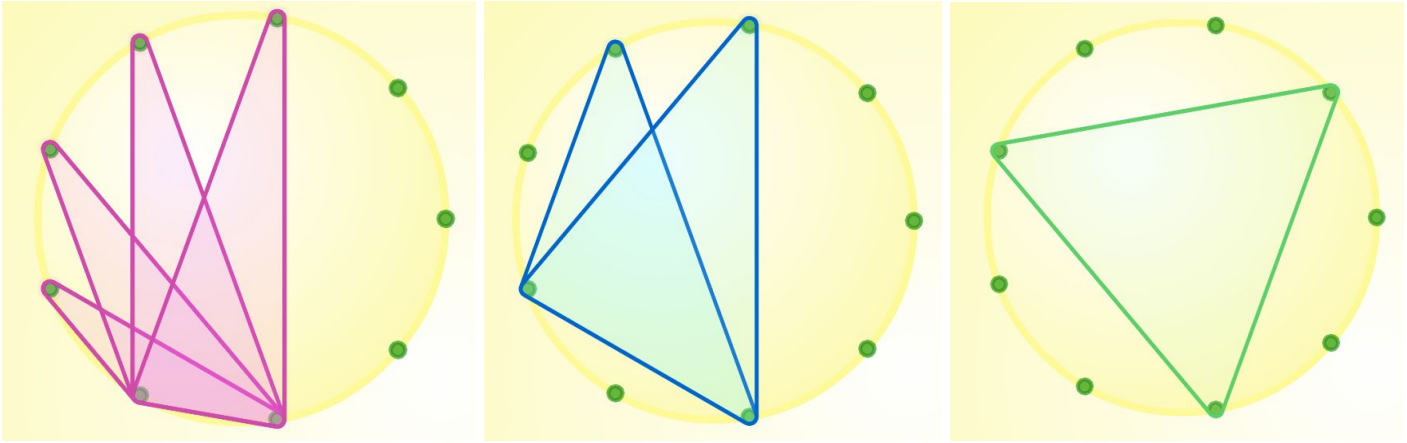


9 pins



9-pins

Here are all of the triangles on an 9-pin board:



There are **7** different triangles!

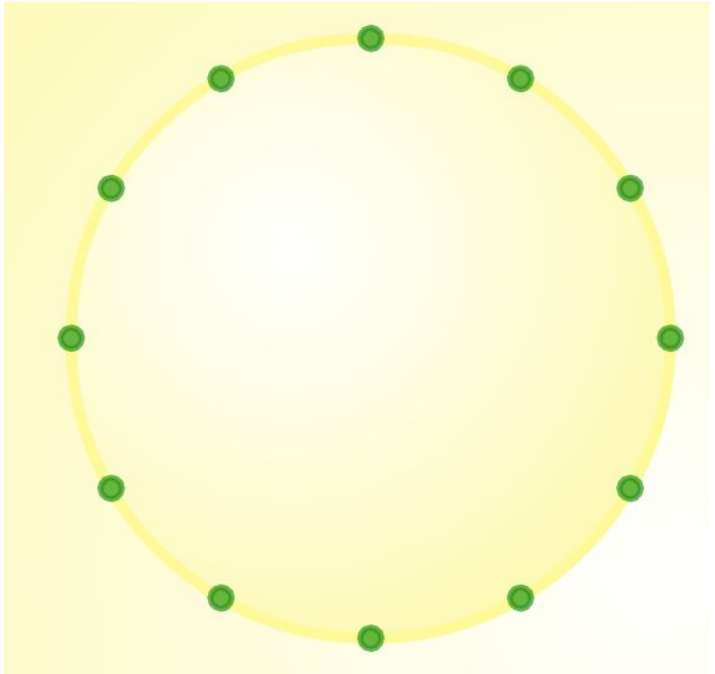
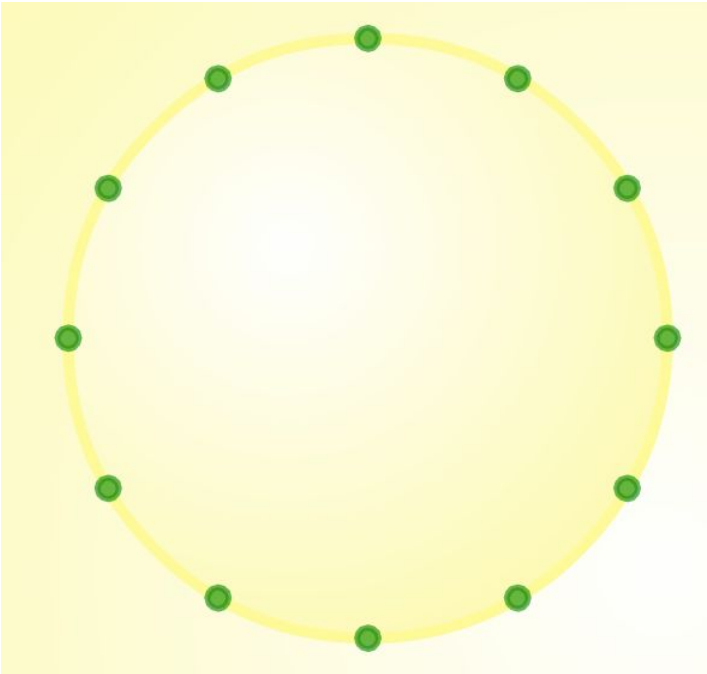
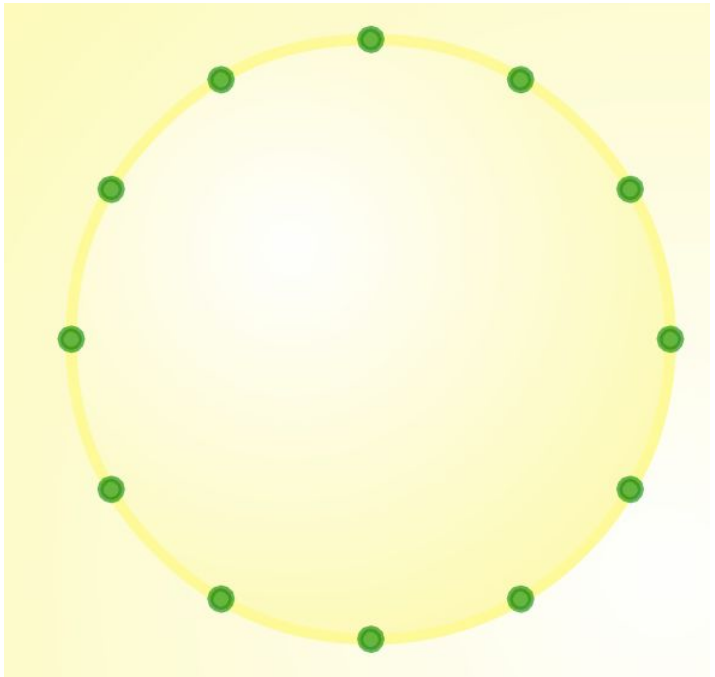
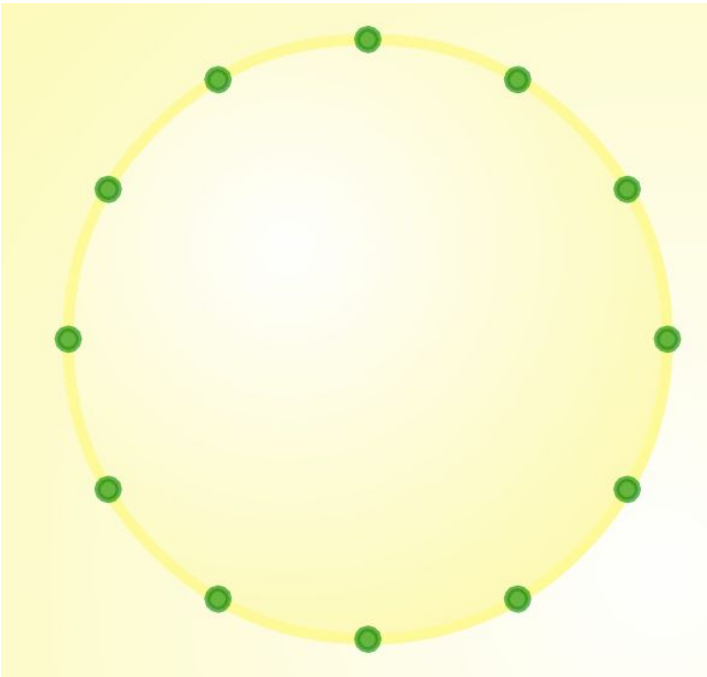
Did you guess that there would be 7? Did you find all 7?

Now guess again how many triangles there will be on the 12-pin board.

Has your guess changed? Why?

When you have made your guess, try and find them...

12-pins



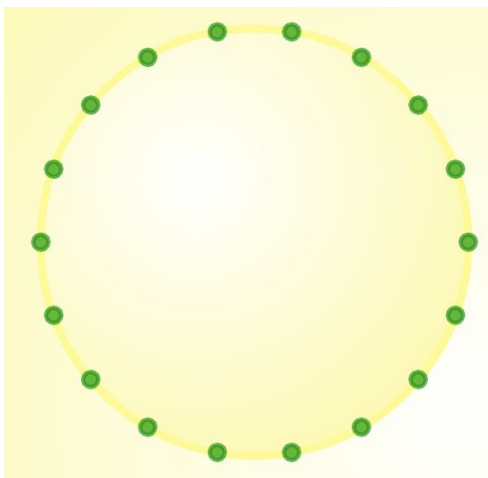
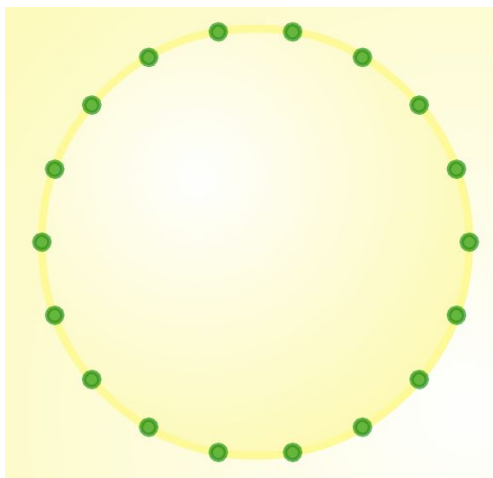
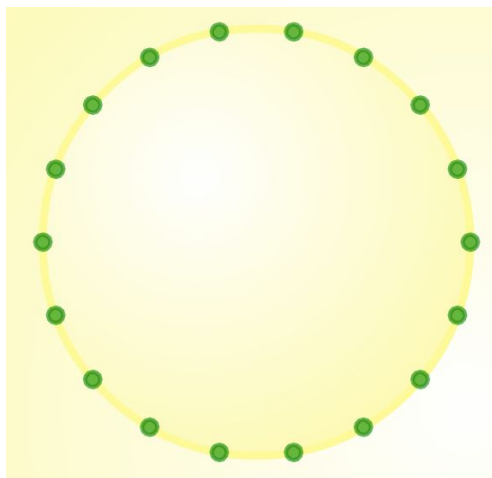
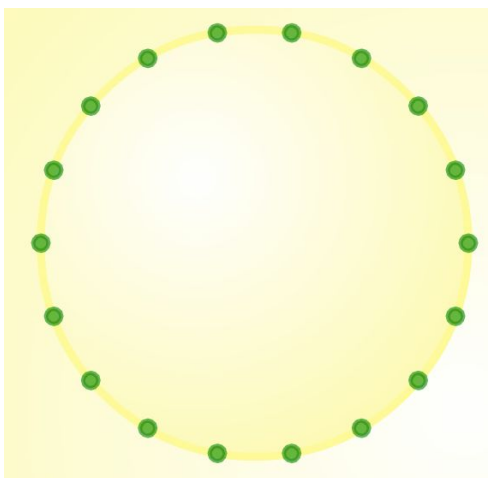
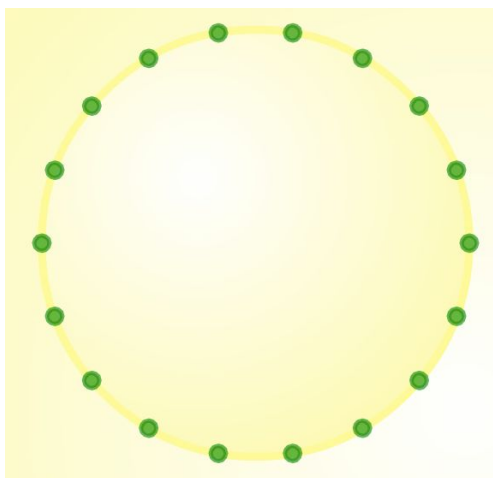
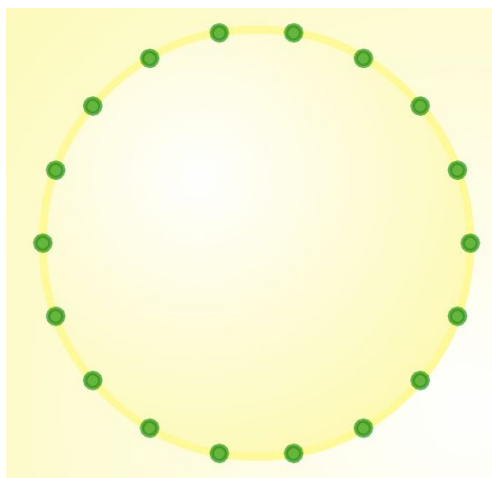
Are you sure you have found them all, with no repeats?

Was your guess correct?

18 pins

Now, for the biggie! How many triangles on an 18-pin board? Have a guess before trying, and explain why you have made this guess:

Now see if you can find them all:



Was your guess correct? Are there any patterns in the number of triangles!?
