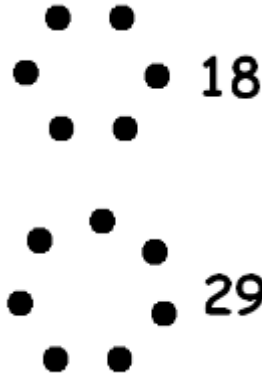


# WITHOUT WORDS

*Mathematical Puzzles to Confound and Delight*



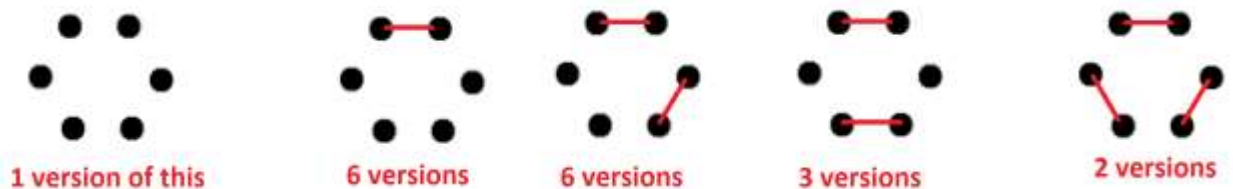
## WW 35: SOLUTION



This question is asking:

*In how many different ways could some, none, all of  $N$  people sitting around a table shake hands with a neighbor?*

This can be counted by looking at basic possible configurations and their rotations. For example, here's how to count the 18 possibilities for six people at a table.



**Challenge:** Consider the Fibonacci numbers 1, 2, 5, 8, 13, 21, 34, 55, 89, 144, ... (See WW19, WW23, and WW25). Divide each of these numbers by three and round down to the nearest integer. This gives the sequence:

0, 0, 1, 2, 4, 7, 11, 18, 29, 48, ...

Coincidence? Is the answer for eight people at a table indeed 48?