

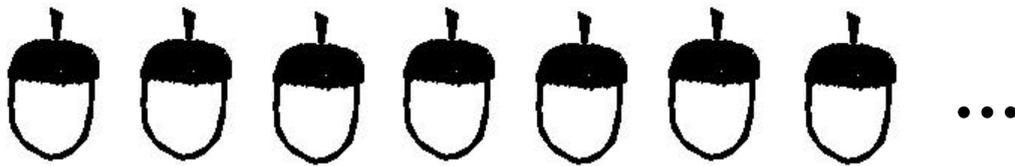
## The Game of Nim

### The Second Game of Nim



When his friend the barn owl, saw him so sad, she decided to help him. Since she spent the nights without any sleeping, she had a lot of time to think, and she had an idea that could cheer her friend up.

It took her almost 2 days in finding him, but, at last she saw him. He was underneath a big mushroom staring at the 5 acorns opposite him. The barn owl looked for several acorns and she added one to the pile. *Why they must be*



*5 acorns?; can't you start with 6?, or 7?, or whatever number you may want?.*

And, why you can only remove 1 or 2 acorns in each turn?. The game would be much more amusing if you started with more acorns and you could remove from 1 to 3 in each turn, or from 1 to 5, or from 1 to the number that you want.

Nim liked the idea very much. His game would never finish any more!, he thought. After thanking his friend, he ran to look

for the other gnomes and to inform them the new rules of the game.

The gnomes went back to play again, but now, they started with 6 acorns and, in each turn, they could remove 1 or 2.

Soon after, all the gnomes knew how to play to always win, and if, for it, they had or not to be the first in removing acorns from the pile.



Now it is your turn to play with 6 objects and find out the **winning strategy**:

~~¿~~ Who can always win?, the first or the second to start playing?,

~~¿~~ How he must play to be sure of winning, no matter what the other player does?

**YOU WILL NEED:**

**6 objects**