

---

## Joc del Guess

Autor:

Data de publicació: 29-04-2016

Retalla les 5 cartes a mostrades a continuació.

Dona les 5 cartes a un amic, i demana-li que pensi un número secret entre 1 i 31, i que et torni totes les cartes en que apareix aquest número.

Pots endevinar el número secret mitjançant la suma de tots els primers números de les cartes que t'ha tornat. Per exemple, si et torna les cartes 1<sup>a</sup> i 3<sup>a</sup> de la fila de dalt, llavors el nombre secret seria el 20, ja que els primers números d'aquestes cartes són 16 i 4, que sumen 20.

El sistema EDAC dels ordinadors (Error detection and correction) funciona mitjançant un principi molt similar

Com funciona?

Remember how to write the numbers from 1 to 31 in binary? See the chart below if you forgot. The sequence of 1's and 0's in a binary number tell us which powers of 2 add up to make the number. For example,  $19 = 16+2+1$ , so in binary we write 10011.

Now notice that the number 19 appears only on the first, fourth, and fifth cards above. That is, 19 appears on the cards with first numbers 16, 2, and 1, and it does not appear on the cards 8 or 4.

The 5 cards correspond to the powers of 2. The numbers that are on the first card (with "16" as the first number) are the ones that have a "1" in the 16's position when we write it in binary. The numbers on the "8" card are those with a "1" in the 8 position in binary. And so on for the other cards. So, when you add up first numbers on the cards that a "secret" number is on, you are adding up the powers of two that add up to the secret number!

Contant en Binari: