**Filling The Cards**

Now that we have converted a decimal number into a binary number, we have to put the number into the cards. So, the number 29 will go to cards 5, 4, 3 and 1 because

- 16 is the first number on card 5,

- 8 is the first number on card 4,

- 4 is the first number on card 3,

- 0 does not exist on any card, and

- 1 is the first number on card 1

Similarly, the number

53

is expressed as

110101

in binary notation. To convert

110101

back to its decimal number, write

53 = 1 \times 2^5 + 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 0 \times 2^1 + 1 \times 2^0

Thus 53 = 32 + 16 + 0 + 4 + 0 + 1

So, the number 53 will go to cards 6, 5, 3 and 1 because

- 32 is the first number on card 6,

- 16 is the first number on card 5,

- 4 is the first number on card 3, and

- 1 is the first number on card 1