

### Ejercicio 3:

Suponiendo que se tienen registros de 16 bits, convertir a binario **sin** signo los siguientes números en base 10:

a)  $123_{10} = 000000001111011b$

$$123 = 2 \cdot 61 + 1$$

$$61 = 2 \cdot 30 + 1$$

$$30 = 2 \cdot 15 + 0$$

$$15 = 2 \cdot 7 + 1$$

$$7 = 2 \cdot 3 + 1$$

$$3 = 2 \cdot 1 + 1$$

$$1 = 2 \cdot 0 + 1$$



b)  $59_{10} = 000000000111011b$

$$59 = 2 \cdot 29 + 1$$

$$29 = 2 \cdot 14 + 1$$

$$14 = 2 \cdot 7 + 0$$

$$7 = 2 \cdot 3 + 1$$

$$3 = 2 \cdot 1 + 1$$

$$1 = 2 \cdot 0 + 1$$

c)  $255.46_{10} = 11111111.0111010b$

$$255 = 11111111b$$

$$0.46 \times 2 = 0.92 \quad 0$$

$$0.92 \times 2 = 1.84 \quad 1$$

$$0.84 \times 2 = 1.68 \quad 1$$

$$0.68 \times 2 = 1.36 \quad 1$$

$$0.36 \times 2 = 0.72 \quad 0$$

$$0.72 \times 2 = 1.44 \quad 1$$

$$0.44 \times 2 = 0.88 \quad 0$$



d)  $98.019_{10} = 1100010.000001001$

$$98 = 2 \cdot 49 + 0$$

$$49 = 2 \cdot 24 + 1$$

$$24 = 2 \cdot 12 + 0$$

$$12 = 2 \cdot 6 + 0$$

$$6 = 2 \cdot 3 + 0$$

$$3 = 2 \cdot 1 + 1$$

$$1 = 2 \cdot 0 + 1$$

$$0.019 \times 2 = 0.038 \quad 0$$

$$0.038 \times 2 = 0.076 \quad 0$$

$$0.076 \times 2 = 0.152 \quad 0$$

$$0.152 \times 2 = 0.304 \quad 0$$

$$0.304 \times 2 = 0.608 \quad 0$$

$$0.608 \times 2 = 1.216 \quad 1$$

$$0.216 \times 2 = 0.432 \quad 0$$

$$0.432 \times 2 = 0.864 \quad 0$$

$$0.864 \times 2 = 1.728 \quad 1$$