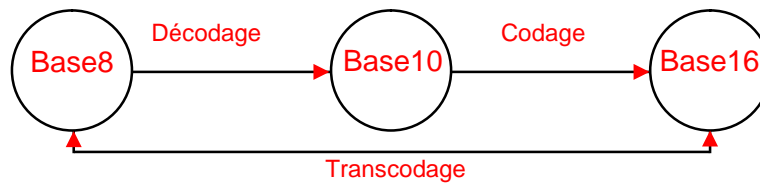


Exercice 1 :**Exercice 2 :**

$$A = 42$$

$$\begin{array}{r}
 42 \mid 2 \\
 \hline
 0 \mid 21 \mid 2 \\
 \hline
 1 \mid 10 \mid 2 \\
 \hline
 0 \mid 5 \mid 2 \\
 \hline
 1 \mid 2 \mid 2 \\
 \hline
 0 \mid 1 \mid 2 \\
 \hline
 1 \mid 0
 \end{array}$$

$$\begin{array}{r}
 42 \mid 16 \\
 \hline
 10 \mid 2 \mid 16 \\
 \hline
 2 \mid 0
 \end{array}$$

$$A = 42_{(10)} = 101010_{(2)} = 2A_{(16)}$$

Autre méthode :

- Pour convertir un nombre binaire en hexadécimal, **il faut le décomposer en groupes de 4 bits ($2^4=16$)**.

Binaire :	0010	1010
Hexadécimal :	2	A

$$B = 68$$

$$\begin{array}{r}
 68 \mid 2 \\
 \hline
 0 \mid 34 \mid 2 \\
 \hline
 0 \mid 17 \mid 2 \\
 \hline
 1 \mid 8 \mid 2 \\
 \hline
 0 \mid 4 \mid 2 \\
 \hline
 0 \mid 2 \mid 2 \\
 \hline
 0 \mid 1 \mid 2 \\
 \hline
 1 \mid 0
 \end{array}$$

Binaire :	100	0100
Hexadécimal :	4	4

$$B = 68_{(10)} = 1000100_{(2)} = 44_{(16)}$$

$$C = 121_{(10)} = 1111001_{(2)} = 79_{(16)}$$

Exercice 3 :

$$A = 101110_2 = 0.2^0 + 1.2^1 + 1.2^2 + 1.2^3 + 0.2^4 + 1.2^5 = 2 + 4 + 8 + 32 = 46_{(10)}$$

$$B = 110100_2 = 1.2^2 + 1.2^4 + 1.2^5 = 4 + 16 + 32 = 52_{(10)}$$

$$C = 11111111_2 = 255_{(10)}$$

$$D = F_{16} = 1.16^0 + 15.16^1 = 1 + 240 = 241_{(10)}$$

$$E = 12B_{16} = 11.16^0 + 2.16^1 + 1.16^2 = 11 + 32 + 256 = 299_{(10)}$$

Exercice 4:

Pour le code BCD chaque chiffre décimal est défini par son équivalent binaire **codé sur quatre bits**

$$A = 374_{10}$$

Décimal :	3	7	4
Code BCD :	0 011	0111	0100

$$A = 374_{10} = 001101110100_{(BCD)}$$

$$B = 10101110_2 = 174_{(10)} = 000101110100_{(BCD)}$$

$$C = 3289_{10} = 0011001010001001_{(BCD)}$$

Exercice 5:

$$A = 00010001_{(BCD)} = 11_{(10)}$$

$$B = 00100110_{(BCD)} = 26_{(10)}$$

$$C = 010100111000_{(BCD)} = 538_{(10)}$$

Exercice 6:

Suite des nombres hexadécimaux de E à 1F.

E – F – 10 – 11 – 12 – 13 – 14 – 15 – 16 – 17 – 18 – 19 – 1A – 1B – 1C – 1D – 1E – 1F – 20.

Exercice 7:

$$B52_{(16)} = 101101010010_{(2)}$$

$$42_{(16)} = 66_{(10)} = 01100110_{(BCD)}$$

$$000110010111_{(BCD)} = 197_{(10)} = 11000101_{(2)}$$

$$001110000111_{(BCD)} = 387_{(10)} = 183_{(16)}$$

$$9D_{(16)} = 157_{(10)} = 000101010111_{(BCD)}$$

Exercice 8: