

$$1) 1001_2 \rightarrow \text{base } 4$$

$$1001 = 9_{10} \rightarrow \begin{array}{r} 9 \div 4 \\ \underline{8} \\ 1 \end{array} \Rightarrow \boxed{21_4 = 1001_2}$$

$1 \rightarrow 2$   
 $0 \rightarrow 1$

$$2) 104_5 \rightarrow \text{base } 10$$

$$\begin{array}{l} 4 \cdot 5^0 \rightarrow 4 \\ 0 \cdot 5^1 \rightarrow 0 + \\ 1 \cdot 5^2 \rightarrow 25 \\ \hline 29 \end{array} \quad \boxed{104_5 = 29_{10}}$$

$$3) 402_2 \rightarrow \text{base } 3$$

402 no es expresable en base 2;  $4 \geq 2$  y  $2 \geq 2$

$$4) 145_7 \rightarrow \text{base } 5$$

$$\begin{array}{l} 5 \cdot 7^0 \rightarrow 5 \\ 4 \cdot 7^1 \rightarrow 28 + \\ 1 \cdot 7^2 \rightarrow 49 \\ \hline 82 \end{array} \quad 145_7 = 82_{10}$$

$$\begin{array}{r} 82 \overline{) 145} \\ \underline{32} \phantom{0} \\ 113 \\ \underline{110} \\ 3 \end{array} \Rightarrow \boxed{312_5 = 145_7}$$

$2 \rightarrow 1$   
 $0 \rightarrow 1$

5)  $145_{10} \rightarrow \text{base } 7$

$145$  no se puede expresar en base  $5$ ,  $5 \geq 5 //$

6)  $1000_9 \rightarrow \text{base } 3$

$$\begin{aligned} 0 \cdot 9^0 &= 0 & 1000_9 &= 729_{10} \\ 0 \cdot 9^1 &= 0 \\ 0 \cdot 9^2 &= 0 \\ 1 \cdot 9^3 &= 729 \end{aligned}$$

$$\begin{array}{r} 729 \overline{) 1000} \\ \underline{729} \phantom{00} \\ 271 \phantom{0} \\ \underline{243} \phantom{0} \\ 28 \phantom{0} \\ \underline{27} \phantom{0} \\ 1 \phantom{0} \\ \underline{0} \phantom{0} \\ 0 \phantom{0} \end{array}$$

$1000000_3 = 1000_9 //$

7)  $87_9 \rightarrow \text{base } 4$

$$\begin{aligned} 7 \cdot 9^0 &= 7 & 87_9 &= 79_{10} \\ 8 \cdot 9^1 &= 72 \\ \hline &79 \end{aligned}$$

$$\begin{array}{r} 79 \overline{) 100} \\ \underline{79} \phantom{00} \\ 21 \phantom{0} \\ \underline{20} \phantom{0} \\ 1 \phantom{0} \\ \underline{0} \phantom{0} \\ 0 \phantom{0} \end{array}$$

$1033_4 = 87_9 //$

8)  $102_5 \rightarrow \text{base } 3$

$$\begin{aligned} 2 \cdot 5^0 &= 2 & 102_5 &= 25_{10} \\ 0 \cdot 5^1 &= 0 \\ 1 \cdot 5^2 &= 25 \end{aligned}$$

$$\begin{array}{r} 25 \overline{) 102} \\ \underline{25} \phantom{00} \\ 77 \phantom{0} \\ \underline{75} \phantom{0} \\ 2 \phantom{0} \\ \underline{0} \phantom{0} \\ 0 \phantom{0} \end{array}$$

$221_3 = 102_5 //$



9)  $999_{10} \rightarrow \text{base } 8$

$$\begin{array}{r} 999 \div 8 \\ 117 \overline{) 999} \\ \underline{888} \phantom{00} \\ 111 \phantom{00} \\ \underline{96} \phantom{00} \\ 54 \phantom{00} \\ \underline{48} \phantom{00} \\ 6 \phantom{00} \\ \underline{0} \phantom{00} \\ 0 \phantom{00} \end{array}$$

$$\boxed{1743_8 = 999_{10}}$$

10)  $11011001_2 \rightarrow \text{base } 3$

$$11011001_2 = 217_{10}$$

$$\begin{array}{r} 217 \div 3 \\ 72 \overline{) 217} \\ \underline{144} \phantom{00} \\ 73 \phantom{00} \\ \underline{66} \phantom{00} \\ 7 \phantom{00} \\ \underline{6} \phantom{00} \\ 1 \phantom{00} \\ \underline{0} \phantom{00} \\ 0 \phantom{00} \end{array}$$

$$\boxed{22001_3 = 11011001_2}$$