05/08/22

Guía 7 (MN)

7) Sup $z_{10} = 1248 \Rightarrow z = 1\cdot 10^3 + 2\cdot 10^2 + 4\cdot 10^1 + 8\cdot 10^0$

¿z_2? $1248 - \underbrace{1024}_{2^{10}} = 224$

$224 - \underbrace{128}_{2^7} = 96$

$96 - \underbrace{64}_{2^6} = 32$

$32 - \underbrace{32}_{2^5} = 0$

$\therefore z_2 = 10011100000 = 1\cdot 2^{10} + 0\cdot 2^9 + 0\cdot 2^8 + 1\cdot 2^7 + 1\cdot 2^6 + 1\cdot 2^5 + 0\cdot 2^4 + 0\cdot 2^3 + 0\cdot 2^2 + 0\cdot 2^1 + 0\cdot 2^0$

* Veamos cómo recuperar estos coeficientes:

$z_{10} = 1248$:

$\frac{z_{10}}{10^0} \equiv 10 = 8$; $\frac{z_0 - 8}{10^1} \equiv 10 = 4$

$\frac{z_{10} - 48}{10^2} \equiv 10 = 2$; $\frac{z_{10} - 248}{10^3} \equiv 10 = 1$

$\Rightarrow \alpha_{n,10} = \{1, 2, 4, 8\}$

$\frac{z_{10}}{2^0} \equiv 2 = 0$; $\frac{z_{10}}{2^1} \equiv 2 = 0$; ... ; $\frac{z_{10}}{2^5} \equiv 2 = 1$; $\frac{z_{10} - 32}{2^6} \equiv 2 = 1$; ... ; $\frac{z_{10} - 224}{2^{10}} \equiv 2 = 1$

$\Rightarrow \alpha_{n,2} = \{1,0,0,1,1,1,0,0,0,0,0\}$

($z_{10} - 1248 = 0 \Rightarrow$ end)

Veamos divisiones sucesivas: $\frac{1248}{10} = 124.\textcircled{8}$ → Los coeficientes son el "resto" de la división

$\frac{124.8}{10} = 12.\textcircled{4}8$

$\frac{12.48}{10} = 1.\textcircled{2}48$

$\frac{1.248}{10} = 0.\textcircled{1}248$

P/ base 2: $\frac{1248}{2} = 624.0$

$\frac{624}{2} = 312.0$

$\frac{312}{2} = 156.0$

$\frac{156}{2} = 78.0$

$\frac{78}{2} = 39.0$

$\frac{39}{2} = 19.5$

$\frac{19.5}{2} = 9.75$

$\frac{9.75}{2} = 4.875$

$\frac{4.875}{2} = 2.4375$

$\frac{11}{2} \approx 1.22$

$\frac{1.22}{2} \approx 0.61 < 1$

∴ La única que puedo decir es que z_2 tendrá 11 dígitos y los 5 últimos son "0".