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Tarea #1: Sistema numérico y conversiones

$$1) (417.3)_8 = 4 \times 8^2 + 1 \times 8^1 + 7 \times 8^0 + 3 \times 8^{-1}$$

$$\Rightarrow 256 + 8 + 7 + 0.375$$

$$\Rightarrow 271.375$$

$$2) (110111.111)_2$$

$$\Rightarrow 1 \times 2^5 + 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0 + 1 \times 2^{-1} + \dots$$

$$\dots 1 \times 2^{-2} + 1 \times 2^{-3}$$
$$\Rightarrow 32 + 16 + 0 + 4 + 2 + 1 + 1/2 + 1/4 + 1/8$$

$$\Rightarrow 55.875$$

$$3) (23FA.CD)_{16}$$

$$\Rightarrow 2 \times 16^3 + 3 \times 16^2 + 15 \times 16^1 + 10 \times 16^0 + 12 \times 16^{-1} + 13 \times 16^{-2}$$

$$\Rightarrow 8192 + 768 + 240 + 10 + 0.75 + 0.051$$

$$\Rightarrow 9210.801$$

$$4) (1485.156)_9$$

$$\Rightarrow 1 \times 9^3 + 4 \times 9^2 + 8 \times 9^1 + 5 \times 9^0 + 1 \times 9^{-1} + 5 \times 9^{-2} + 6 \times 9^{-3}$$

$$\Rightarrow 1130 + 0.18107$$

$$\Rightarrow 1130.18107$$

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5) $(AB167.B9)_{12}$

$$\Rightarrow 10 \times 12^4 + 11 \times 12^3 + 1 \times 12^2 + 6 \times 12^1 + 7 \times 12^0 + 11 \times 12^{-1} + 9 \times 12^{-2}$$

$$\Rightarrow 207360 + 19008 + 144 + 72 + 7 + 0.917 + 0.0625$$

$$\Rightarrow 226591.9795$$

6) $(13467.A)_{13}$

$$\Rightarrow 1 \times 13^4 + 3 \times 13^3 + 4 \times 13^2 + 6 \times 13^1 + 7 \times 13^0 + 10 \times 13^{-1}$$

$$\Rightarrow 28561 + 6591 + 676 + 78 + 7 + 0.769$$

$$\Rightarrow 35913.769$$

7) $(1011000111.10101)_2$

$$\Rightarrow 1 \times 2^9 + 1 \times 2^7 + 1 \times 2^6 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0 + 1 \times 2^{-1} + 1 \times 2^{-3} + \dots + 1 \times 2^{-5}$$

$$\Rightarrow 512 + 128 + 64 + 4 + 2 + 1 + 0.5 + 0.125 + 0.03125$$

$$\Rightarrow 711.65625$$

$$8) (2312.33)_4$$

$$\Rightarrow 2 \times 4^3 + 3 \times 4^2 + 1 \times 4^1 + 2 \times 4^0 + 3 \times 4^{-1} + 3 \times 4^{-2}$$

$$\Rightarrow 128 + 48 + 4 + 2 + 0.75 + 0.1875$$

$$\Rightarrow 182.9375 //$$

$$9) (2112.122)_3$$

$$\Rightarrow 2 \times 3^3 + 1 \times 3^2 + 1 \times 3^1 + 2 \times 3^0 + 1 \times 3^{-1} + 2 \times 3^{-2} + 2 \times 3^{-3}$$

$$\rightarrow 54 + 9 + 3 + 2 + 0.\overline{33} + 0.\overline{22} + 0.074$$

$$\Rightarrow 68.629 //$$

$$10) (+134.43)_5$$

$$\Rightarrow 1 \times 5^3 + 3 \times 5^2 + 4 \times 5^1 + 4 \times 5^0 + 4 \times 5^{-1} + 3 \times 5^{-2}$$

$$\Rightarrow 125 + 75 + 20 + 4 + 0.8 + 0.12$$

$$\Rightarrow 224.92 //$$

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$$11) (541.553)_6$$

$$\Rightarrow 5 \times 6^2 + 4 \times 6^1 + 1 \times 6^0 + 5 \times 6^{-1} + 5 \times 6^{-2} + 3 \times 6^{-3}$$

$$\Rightarrow 180 + 24 + 1 + 0.834 + 0.138 + 0.0138$$

$$\Rightarrow 205.9858$$

$$12) (1654.36)_7$$

$$\Rightarrow 1 \times 7^3 + 6 \times 7^2 + 5 \times 7^1 + 4 \times 7^0 + 3 \times 7^{-1} + 6 \times 7^{-2}$$

$$\Rightarrow 343 + 294 + 35 + 4 + 0.428 + 0.122$$

$$\Rightarrow 676.55$$

$$13) (A179.AA)_{11}$$

$$\Rightarrow 10 \times 11^3 + 1 \times 11^2 + 7 \times 11^1 + 9 \times 11^0 + 10 \times 11^{-1} + 10 \times 11^{-2}$$

$$\Rightarrow 13310 + 121 + 77 + 9 + 0.0909 + 0.0826$$

$$\Rightarrow 13517.1735$$

0.001

$$14) (DC9A.DC)_{14}$$

$$\Rightarrow 13 \times 14^3 + 12 \times 14^2 + 9 \times 14^1 + 10 \times 14^0 + 13 \times 14^{-1} + 12 \times 14^{-2}$$

$$\Rightarrow 35672 + 2352 + 126 + 10 + 0.928 + 0.061$$

$$\Rightarrow 38160.989 //$$

$$15) (EE459.E9)_{15}$$

$$\Rightarrow 14 \times 15^4 + 14 \times 15^3 + 4 \times 15^2 + 5 \times 15^1 + 9 \times 15^0 + 14 \times 15^{-1} + 9 \times 15^{-2}$$

$$\Rightarrow 708750 + 47250 + 900 + 75 + 9 + 0.933 + 0.04$$

$$\Rightarrow 756984.9733 //$$

$$16) (2567.856)_{16}$$

$$\Rightarrow 2 \times 16^3 + 5 \times 16^2 + 6 \times 16^1 + 7 \times 16^0 + 8 \times 16^{-1} + 5 \times 16^{-2} + 6 \times 16^{-3}$$

$$\Rightarrow 8192 + 1280 + 96 + 7 + 0.5 + 0.019 + 0.001464$$

$$\Rightarrow 9575.520 //$$

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17) $(4732.71)_8$

$$\Rightarrow 4 \times 8^3 + 7 \times 8^2 + 3 \times 8^1 + 2 \times 8^0 + 7 \times 8^{-1} + 1 \times 8^{-2}$$

$$\Rightarrow 2048 + 448 + 24 + 2 + 0.875 + 0.0156$$

$$\Rightarrow 2522.8906 //$$

18) $(111101101.10111)_2$

$$\Rightarrow 1 \times 2^8 + 1 \times 2^7 + 1 \times 2^6 + 1 \times 2^5 + 1 \times 2^3 + 1 \times 2^2 + 1 \times 2^0 + \dots$$
$$\dots 1 \times 2^{-1} + 1 \times 2^{-3} + 1 \times 2^{-4} + 1 \times 2^{-5}$$

$$\Rightarrow 256 + 128 + 64 + 32 + 8 + 4 + 1 + 0.5 + 0.125 + 0.0625 + 0.03125$$

$$\Rightarrow 493.718 //$$

19) $(13AFF.DEF)_{16}$

$$\Rightarrow 1 \times 16^4 + 3 \times 16^3 + 10 \times 16^2 + 15 \times 16^1 + 15 \times 16^0 + 13 \times 16^{-1} + \dots$$
$$\dots 14 \times 16^{-2} + 15 \times 16^{-3}$$

$$\Rightarrow 65536 + 12288 + 2560 + 240 + 15 + 0.8125 + 0.054 + 0.00366$$

$$\Rightarrow 80639.87 //$$

$$20) (32112.312)_4$$

$$\Rightarrow 3 \times 4^4 + 2 \times 4^3 + 1 \times 4^2 + 1 \times 4^1 + 2 \times 4^0 + 3 \times 4^{-1} + 1 \times 4^{-2} + 2 \times 4^{-3}$$

$$\Rightarrow 768 + 128 + 16 + 4 + 2 + 0.75 + 0.0625 + 0.03125$$

$$\Rightarrow 918.84 \checkmark$$

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