

a)

Convertir 1110111 base 2 a base 5

$$\begin{aligned}1110111 &= 1(2)^6 + 1(2)^5 + 1(2)^4 + 0(2)^3 + 1(2)^2 + 1(2)^1 + 1(2)^0 \\ &= 64 + 32 + 16 + 0 + 4 + 2 + 1 \\ &= 119 \text{ base 10}\end{aligned}$$

$$119/5 = 23 \text{ (4)}, 23/5 = 4 \text{ (3)}, 4/5 = 0 \text{ (4)}$$

$$1110111 \text{ base 2} = 434 \text{ base 5}$$

b)

convertir 120 base 3 a base 9

$$\begin{aligned}120 &= 1(3)^2 + 2(3)^1 + 0(3)^0 \\ &= 9 + 6 \\ &= 15 \text{ base 10}\end{aligned}$$

$$15/9 = 1 \text{ (6)}, 6/9 = 0 \text{ (6)}$$

$$120 \text{ base 3} = 66 \text{ base 9}$$

c)

convertir AABB base 12 a base 2

$$\begin{aligned}\text{AABB} &= 11(12)^3 + 11(12)^2 + 12(12)^1 + 12(12)^0 \\ &= 1728 + 1584 + 144 + 12 \\ &= 3468 \text{ base 10}\end{aligned}$$

$$3468/2 = 1734 \text{ (0)}, 1734/2 = 867 \text{ (0)}, 867/2 = 433 \text{ (1)}, 433/2 = 216 \text{ (1)}, 216/2 = 108 \text{ (0)}, \\ 108/2 = 54 \text{ (0)}, 54/2 = 27 \text{ (0)}, 27/2 = 13 \text{ (1)}, 13/2 = 6 \text{ (1)}, 6/2 = 3 \text{ (0)}, 3/2 = 1 \text{ (1)}, 1/2 = 0 \text{ (1)}$$

$$\text{AABB base 12} = 111110001100 \text{ base 2}$$