4.) a.) 0xabcdef12 → Decimal, Binary

a = 10 = 1010 = $2^3 + 2^1$

b = 11 = 1011 = $2^3 + 2^1 + 2^0$

c = 12 = 1100 = $2^4 + 2^3$

d = 13 = 1101 = $2^4 + 2^3 + 2^2$

e = 14 = 1110 = $2^4 + 2^3 + 2^2 + 2^1$ $\sum_{n=1}^{4}$

f = 15 = 1111 = $\sum_{n=0}^{4} 2^n$

b.) s = 0xabcdef12

where x is a decimal:

$f(x \in S) = \sum_{n=0}^{7} a_n \quad a_n = 16^n \cdot x$

$(16^7 \cdot 10) + (16^6 \cdot 11) + (16^5 \cdot 12) + (16^4 \cdot 13) + (16^3 \cdot 14) + (16^2 \cdot 15) + (16^1 \cdot 1) + (16^0 \cdot 2)$

= 2882400018

c.) $f(d) = \{n \in \mathbb{N} : n \Big|_1^4 = \frac{d}{16^n}$ $g(d) = (d \% 16) \times 16$

$f(8985) = \frac{8985}{16^1} = 561$ $g(8985) = 0.5625 \times 16 = 9$

$= \frac{8985}{16^2} = 35$ $g(f(8985)) = 0.0625 \times 16 = 1$

$= 0.1875 \times 16 = 3$

$= \frac{8985}{16^3} = 2$ $= 0.125 \times 16 = 2$

$= \frac{8985}{16^4} = 0$

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