

Subject 2 - Student 1

$$b = 6$$

$$h = 16$$

$$y(h) = 1B31, ADS$$

$16 > 6 \Rightarrow$ we will use the method of successive divisions and multiplications.

• The calculations will be in base 16

a) Integer part: 1B31

$$\begin{array}{r} 1B31_{16} \overline{) 6000_{16}} \\ \underline{33} \\ 1 \\ \underline{31} \\ 1 \\ \underline{1} \\ 0 \end{array}$$

$$it_1: 1B_{16} = 1 \times 16 + 11 = 27$$

$$27 : 6 = 4, r3$$

$$it_2: 33 = 3 \times 16 + 3 = 48 + 3 = 51$$

$$51 : 6 = 8, r3$$

$$it_3: 31 = 3 \times 16 + 1 = 49$$

$$49 : 6 = 8, r1$$

$$\begin{array}{r} 488_{16} \overline{) 600_{16}} \\ \underline{C1} \\ 08 \\ \underline{1} \\ 0 \end{array}$$

$$it_1: 48 = 4 \times 16 + 8 = 72$$

$$72 : 6 = 12, r0$$

$$it_2: 8 = 0 \times 16 + 8 = 8$$

$$8 : 6 = 1, r2$$

$$\begin{array}{r} C1_{16} \overline{) 20_{16}} \\ \underline{01} \\ 01 \\ \underline{1} \\ 0 \end{array}$$

$$it_1: C = 0 \times 16 + 12 = 12$$

$$12 : 6 = 2, r0$$

$$it_2: 1 = 0 \times 16 + 1 = 1$$

$$1 : 6 = 0, r1$$

$$\begin{array}{r} 20_{(16)} \overline{) 6_{(16)}} \\ \underline{1 \cdot 16} \\ 5_{(16)} \end{array}$$

②

$$\text{it 1: } 20 = 2 \cdot 16 + 0 = 32$$

$$32 : 6 = 5, 12$$

$$\begin{array}{r} 5_{(16)} \overline{) 6_{(16)}} \\ \underline{1 \cdot 6} \\ 0_{(16)} \end{array}$$

⑤

$$\text{it 1: } 5 = 0 \cdot 16 + 5 = 5$$

$$5 : 6 = 0, 15$$

We take the remainders from last to first

$$\Rightarrow 1B31_{(16)} = 52121_{(6)}$$

2) Fractional part: 0, 115

$$\begin{array}{r} 0, 115_{(16)} \\ \underline{6_{(16)}} \\ 4, 07E_{(16)} \end{array}$$

④

$$\text{it 1: } 0_{(16)} + 5_{(16)} \cdot 6_{(16)} = 0 + 5 \cdot 6 = 30$$

$$30 : 16 = 1, 14$$

$$\text{it 2: } 1_{(16)} + 13_{(16)} \cdot 6_{(16)} = 1 + 13 \cdot 6 = 79$$

$$79 : 16 = 4, 15$$

$$\text{it 3: } 4_{(16)} + 10_{(16)} \cdot 6_{(16)} = 4 + 10 \cdot 6 = 64$$

$$64 : 16 = 4, 10$$

$$\text{it 4: } 4 + 0 \cdot 6 = 4$$

$$4 : 16 = 0, 14$$

$$\begin{array}{r} 0, 07E_{(16)} \\ \underline{6_{(16)}} \\ 0, 5F4_{(16)} \end{array}$$

①

$$\text{it 1: } 0_{(16)} + 4_{(16)} \cdot 6_{(16)} = 0 + 4 \cdot 6 = 24 \quad 24 : 16 = 1, 4$$

$$\text{it 2: } 5_{(16)} + 15_{(16)} \cdot 6_{(16)} = 5 + 15 \cdot 6 = 95$$

$$95 : 16 = 5, 15$$

$$\text{it 3: } 5_{(16)} + 0_{(16)} \cdot 6_{(16)} = 5 \quad 5 : 16 = 0, 15$$

$$\text{it 4: } 0_{(16)} + 0_{(16)} \cdot 6_{(16)} = 0 \quad 0 : 16 = 0, 10$$

$$\begin{array}{r} 0, \overline{574}_{(16)} \cdot \\ \quad \quad \quad 6_{(16)} \\ \hline \end{array}$$

$$\textcircled{2}, 3 \text{ B8}$$

$$\text{it}_1: 0_{(16)} + 4_{(16)} \cdot 6_{(16)} = 0 + 4 \cdot 6 = 24 \quad 24 : 16 = 1,2$$

$$\text{it}_2: 1_{(16)} + 5_{(16)} \cdot 6_{(16)} = 1 + 5 \cdot 6 = 31 \quad 31 : 16 = 1,11$$

$$\text{it}_3: 5_{(16)} + 5_{(16)} \cdot 6_{(16)} = 5 + 30 = 35 \quad 35 : 16 = 2,13$$

$$\text{it}_4: 2_{(16)} + 0_{(16)} \cdot 6_{(16)} = 2 \quad 2 : 16 = 0,12$$

We take the integer part of which result from first to last:

$$0,405_{(16)} = 0,402_{(16)}$$

$$\Rightarrow R/16: x_{(16)} = 52121,402_{(16)}$$