SUBJECT 1

STUDENT 1 - GULIN TUDOR
STUDENT 2 - FLORESCU DARIA

STUDENT 2

1. $s_{(51)} = 150345_{(7)}$
$y_{(51)} = 23456_{(7)}$

$x_{(7)} = 150345 - 2345$
$x_{(7)} = 123456_{(7)}$

$$\begin{array}{r} 150345 - \\ 23456 \\ \hline 123456 \end{array}$$

2. $p_{(52)} = 84C854_{(16)}$
$f_{(52)} = 4_{(16)}$

$84C854 : 4 = 213215_{(16)}$

$$\begin{array}{r|l} 84C854 & 4 \\ \hline 8 & 213215 \\ \hline 4 & \\ 4 & \\ \hline C & \\ C & \\ \hline 8 & \\ 8 & \\ \hline 5 & \\ 4 & \\ \hline 14_{(16)} & \end{array}$$

$C = C \cdot 16^0 = 12 \mid 16 = 0$
$\% 16 = 3$

SUBJECT 2

STUDENT 1 - GULIN TUDOR
STUDENT 2 - FLORESCU DARIA

STUDENT 2

SOURCE BASE = 5
DESTINATION BASE = 8.

$x_{(5)} = 14322{,}413$

$14322{,}413_{(5)} = 1_{(8)} \cdot 5^4_{(8)} + 4_{(8)} \cdot 5^3_{(8)} + 3_{(8)} \cdot 5^2_{(8)} + 2_{(8)} \cdot 5^1_{(8)} + 2_{(8)} \cdot 5^0_{(8)} + 4_{(8)} \cdot 5^{-1}_{(8)} +$
$1_{(8)} \cdot 5^{-2}_{(8)} + 3_{(8)} \cdot 5^{-3}_{(8)}$

$= 1161_{(8)} + 1274_{(8)} + 135_{(8)} + 12_{(8)} + 2_{(8)} + 0{,}63_{(8)} + 0{,}02_{(8)} + 0{,}01_{(8)}$

$= 2274_{(8)} + 0{,}672_{(8)}$

$= 2274{,}672_{(8)}$

Subject 2

Student 1

$y_{(8)} = 2274,672_{(8)}$

$b = 5$

$2274_{(8)} \,|\, 5_{(8)}$ → 0362

22

37

14

$\boxed{2}$

$362_{(8)} \,|\, 5_{(8)}$ → 060

36

2

$\boxed{2}$

$60_{(8)} \,|\, 5_{(8)}$ → 11

10

$\boxed{3}$

$11_{(8)} \,|\, 5_{(8)}$ → 01

11

$\boxed{4}$

$1 \,|\, 5_{(8)}$ → 0

1

$\Rightarrow 14322$

it1 $2: 2 \cdot 8^0 = 2 / 5 = 0$
$\% 5 = 2$

it2 $22: 2 \cdot 8 + 2 \cdot 8^0 = 18 / 5 = 3$
$\% 5 = 3$

it3 $: 37 = 3 \cdot 8 + 7 \cdot 8^0 = 31 / 5 = 6$
$\% 5 = 1$

it4 $14 = 1 \cdot 8 + 4 \cdot 8^0 = 12 / 5 = 2$
$\% 5 = 2$

it1 $3 = 3 \cdot 8^0 = 3 / 5 = 0$
$\% 5 = 3$

it2 $36 = 3 \cdot 8 + 6 \cdot 8^0 = 30 / 5 = 6$
$\% 5 = 0$

it3 $2 = 2 \cdot 8^0 = 2 / 5 = 0$
$\% 5 = 2$

it1 $6 = 6 \cdot 8^0 = 6 / 5 = 1$
$\% 5 = 1$

it2 $10 = 1 \cdot 8 + 0 \cdot 8^0 = 8 / 5 = 1$
$\% 5 = 3$

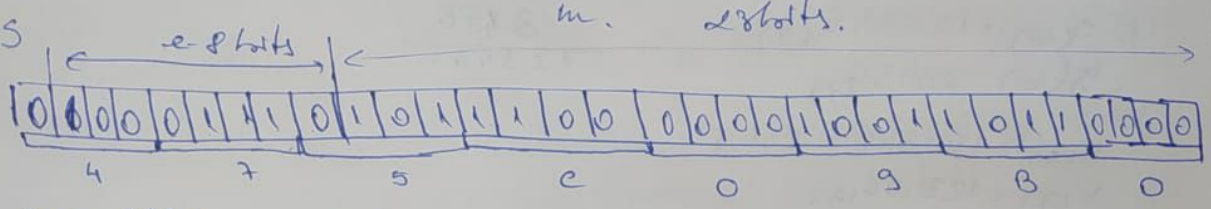
it1 $1 = 1 \cdot 8^0 = 1 / 5 = 0$
$\% 5 = 1$

it2 $11 = 1 \cdot 8 + 1 \cdot 8^0 = 9 / 5 = 1$
$\% 5 = 4$

SUBJECT 3 STUDENT 1 - GULIN TUDOR
STUDENT 2 - FLORESCU DARIA

STUDENT 2

$M_{16} = 475C09B0$



$1000\ 1110_{(2)} \rightarrow x_{(10)}$

$x = 2^0 \cdot 0 + 2^1 \cdot 1 + 2^2 \cdot 1 + 2^3 \cdot 1 + 2^4 \cdot 0 + 2^5 \cdot 0 + 2^6 \cdot 0 + 2^7 \cdot 1$

$= 128 + 8 + 4 + 2$

$= 142.$

$142 - 127 = 15$ - exponent.

$10111000000100\ 011000 \cdot 2^{15} = 10111000000100\,1,011000$

$10111000000100\,1_{(2)} \rightarrow x_{(10)}$

$x_{(10)} = 1 \cdot 2^0 + 0 \cdot 2^1 + 0 \cdot 2^2 + 1 \cdot 2^3 + 0 \cdot 2^4 + 0 \cdot 2^5 + 0 \cdot 2^6 + 0 \cdot 2^7 + 0 \cdot 2^8 + 0 \cdot 2^9 + 1 \cdot 2^{10} + 1 \cdot 2^{11} + 1 \cdot 2^{12} + 0 \cdot 2^{13} + 1 \cdot 2^{14}$

$= 1 + 8 + 1024 + 2048 + 4096 + 16384$

$= 23561$

$0,1011000 = 1 \cdot 2^{-1} + 0 \cdot 2^{-2} + 1 \cdot 2^{-3} + 1 \cdot 2^{-4} + 0 \cdot 2^{-5} + 0 \cdot 2^{-6} + 0 \cdot 2^{-7}$

$= \frac{1}{2} + \frac{1}{8} + \frac{1}{16}$

$= \frac{11}{16}$

$= 0,6875 \sim 0,69.$

$10111000000100\,1,011000_{(2)}$
$23561,69_{(10)}$

2/2

Gulin Tudor
913

Student 1 – Gulin Tudor
2 – Florescu Daria

Subject 1

Student 1

$x = 123456_{(7)}$
$y = 23456_{(7)}$

$x + y$:

$$\begin{array}{r} 1\,1\,1\,1 \\ 123456_{(7)} + \\ 23456_{(7)} \\ \hline 150345_{(7)} = s_{(7)} \end{array}$$

$z = 213215_{(16)}$
$f = 4_{(16)}$

$z \cdot f$:

$$\begin{array}{r} 1 \\ 213215 \cdot \\ 4 \\ \hline 840854_{(10)} = p_{(10)} \end{array}$$

$5_{(16)} \cdot 4_{(16)} = 20_{(10)} \,/\, 16 = 1$
$\%\, 16 = 4$

$1_{(16)} + 1_{(16)} \cdot 4_{(16)} = 5_{(16)} \,/\, 16 = 0$
$\%\, 16 = 5$

$2_{(16)} \cdot 4_{(16)} = 8_{(16)} \,/\, 16 = 0$
$\%\, 16 = 8$

$3_{(16)} \cdot 4_{(16)} = 12_{(16)} \,/\, 16 = 0$
$\%\, 16 = 12 = C$

$1 \cdot 4_{(16)} = 4_{(16)} \,/\, 16 = 0$
$\%\, 16 = 4$

$2_{(10)} \cdot 4_{(10)} = 8_{(16)} \,/\, 16 = 0$
$\%\, 16 = 8$

Gulin
Tudor
913

Student 1 - Gulin Tudor
2 - Florescu Daria

Subject c

Student 1 - continuation

$0,627_{(8)} \longrightarrow ?_{(5)}$

$0,627 \cdot 5 = \boxed{3},36$

$0,36 \cdot 5 = \boxed{1},8$

$0,8 \cdot 5 = \boxed{4}$

$\Rightarrow 0,413$

$X_{(5)} = 14322,413$

Subject 3

Student 1

SP = 32 biți $\begin{cases} 8 = e \\ 1 = S \\ 23 \end{cases}$

$X = 23561,69_{(10)}$

23561 | 2
1 1780 | 2
0 5890 | 2
11 2945 | 2
10 1472 | 2
=17 0736 | 2
16 368 | 2
=18 184 | 2
18 92 | 2
=9 46 | 2
8 23 | 2
10 11 | 2
10 5 | 2
=16 4 | 2
16 2 | 2
=1 1 | 2
0 0

14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
1 0 1 1 1 0 0 0 0 0 0 1 0 0 1

23 - (5 = 8 biți 0,69

$0,89 \cdot 2 = 1,38$

$0,38 \cdot 2 = 0,76$

$0,76 \cdot 2 = 1,52$

$0,52 \cdot 2 = 1,04$

$0,04 \cdot 2 = 0,08$

$0,08 \cdot 2 = 0,16$

$0,16 \cdot 2 = 0,32$

$0,32 \cdot 2 = 0,64$

~~$0,64 \cdot 2 = 1,28$~~

$0,10110000\overline{11}$

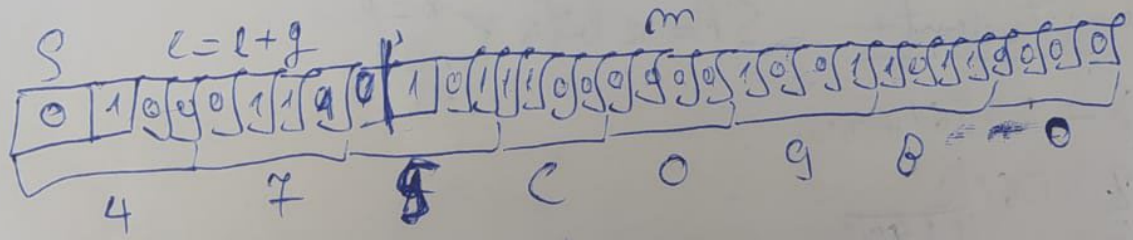
$X = 23561,89_{(10)} = 10111000000001001,10110000\overline{11}_{(2)}$

$= 0,1011100000001001101100001_{(2)} \cdot 2^{15}$

last bit

$l = l + 127 = 15 + 127 = 142$

$142 = 128 + 8 + 4 + 2 =$ 10001110



4 7 5 C 0 9 8 0

$M = 475C098$

4/4