Surname : Pendyala
Firstname : Praveen Kumar
Matrikel # : 2919474

Some of the answers were arrived at while working in group with:

Lokesh Kumar Jamjoor Ramachandran - 2596208
Ankush Chikhale : 2973449

Problem 11.1

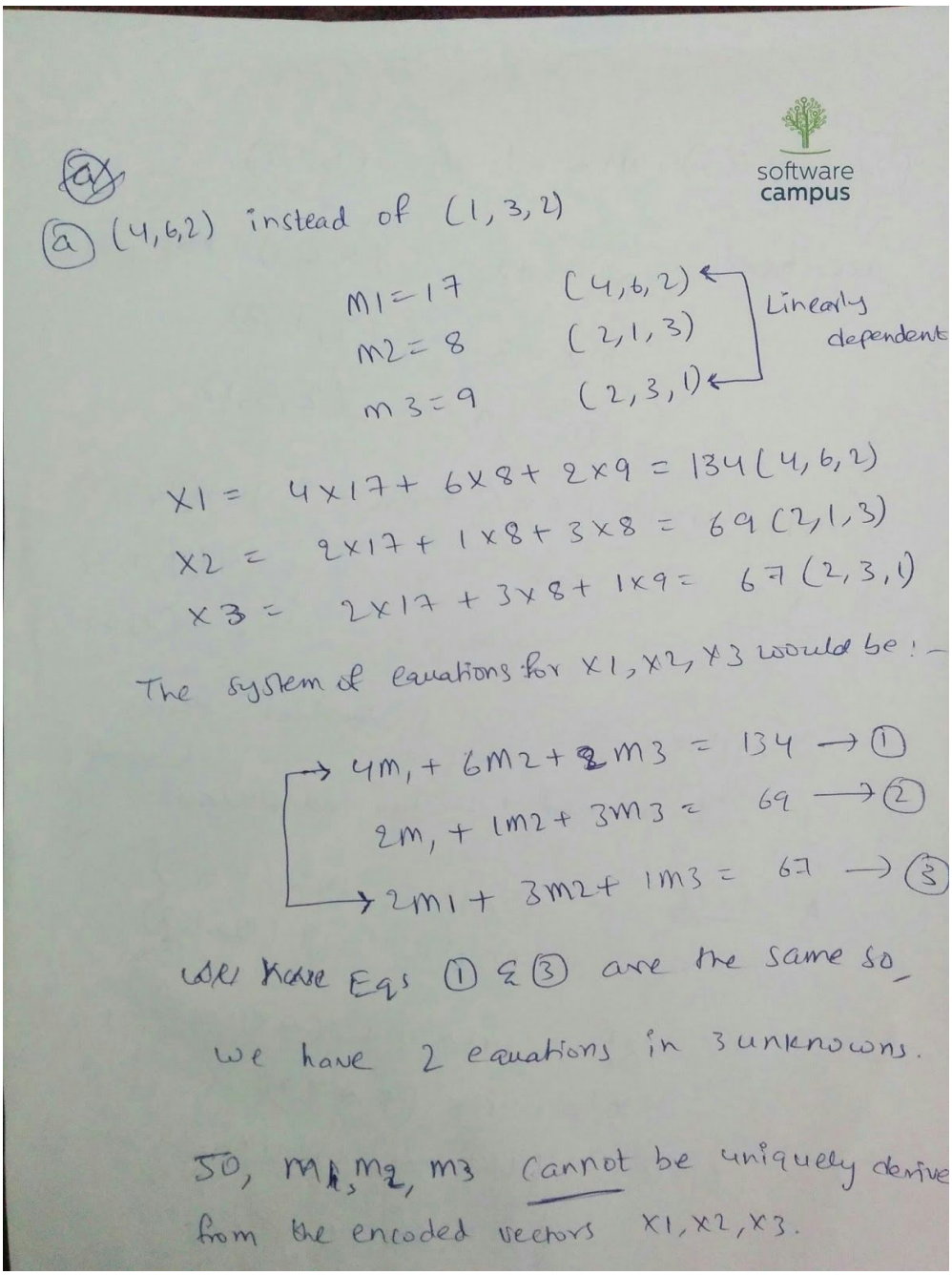
A. Time taken : 40 ms (Node N3 would be a bottleneck)
   Number of message exchanged between nodes : 8

B. Time taken : 30 ms
   Number of message exchanged between nodes : 7

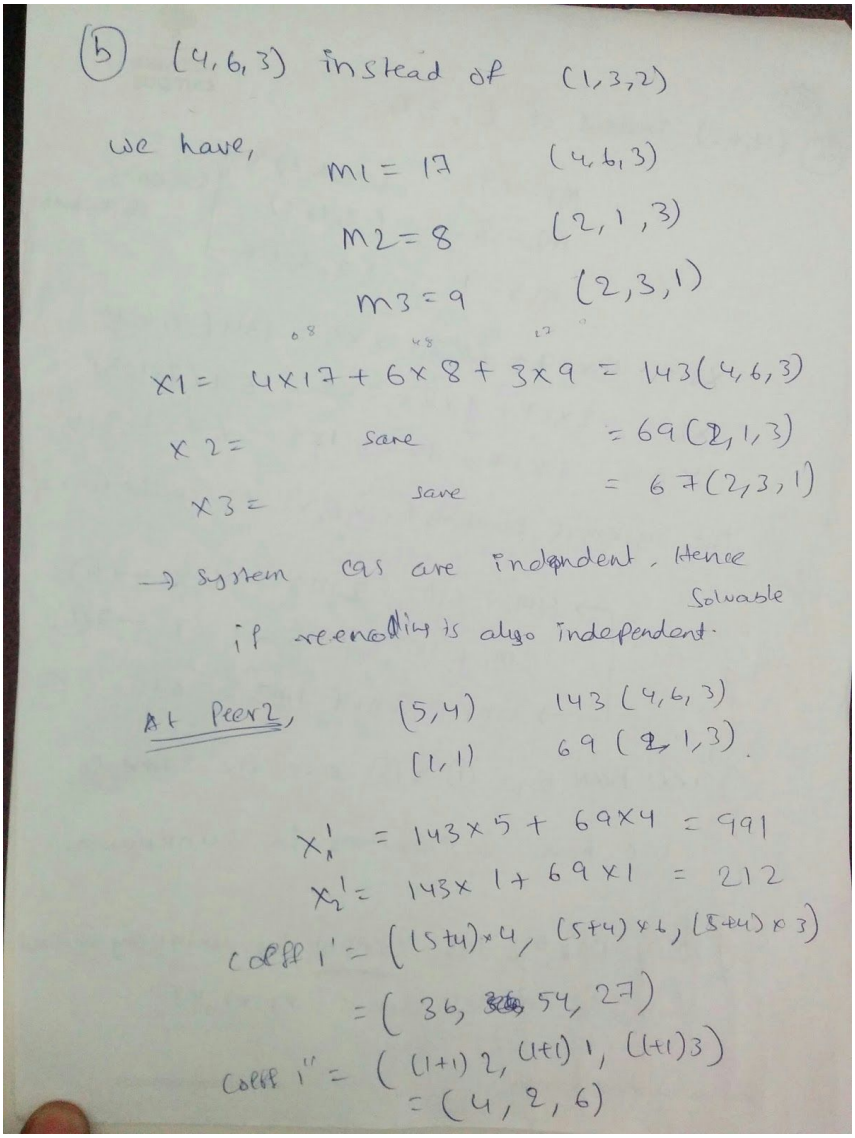
Continued ….

C. Assuming every other coefficients are as chosen in the lecture.

a. Written solution



b. Written solution



(b) (4,6,3) instead of (1,3,2)

we have,

$m_1 = 17$ (4,6,3)

$m_2 = 8$ (2,1,3)

$m_3 = 9$ (2,3,1)

$x_1 = 4\times17 + 6\times8 + 3\times9 = 143$ (4,6,3)

$x_2 =$ save $= 69$ (2,1,3)

$x_3 =$ save $= 67$ (2,3,1)

→ System eqs are independent. Hence Solvable if recreating is also independent.

At Peer2,

(5,4) 143 (4,6,3)

(1,1) 69 (2,1,3).

$x_1' = 143\times5 + 69\times4 = 991$

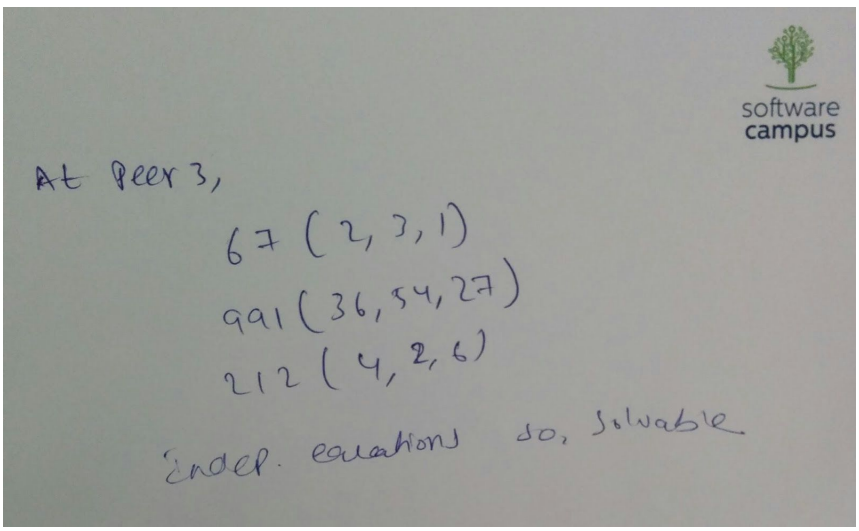
$x_2' = 143\times1 + 69\times1 = 212$

Coeff i' = $(5+4)\times4, (5+4)\times6, (5+4)\times3$)

$= (36, 54, 27)$

Coeff i'' = $((1+1)2, (1+1)1, (1+1)3)$

$= (4, 2, 6)$



software campus

At Peer 3,

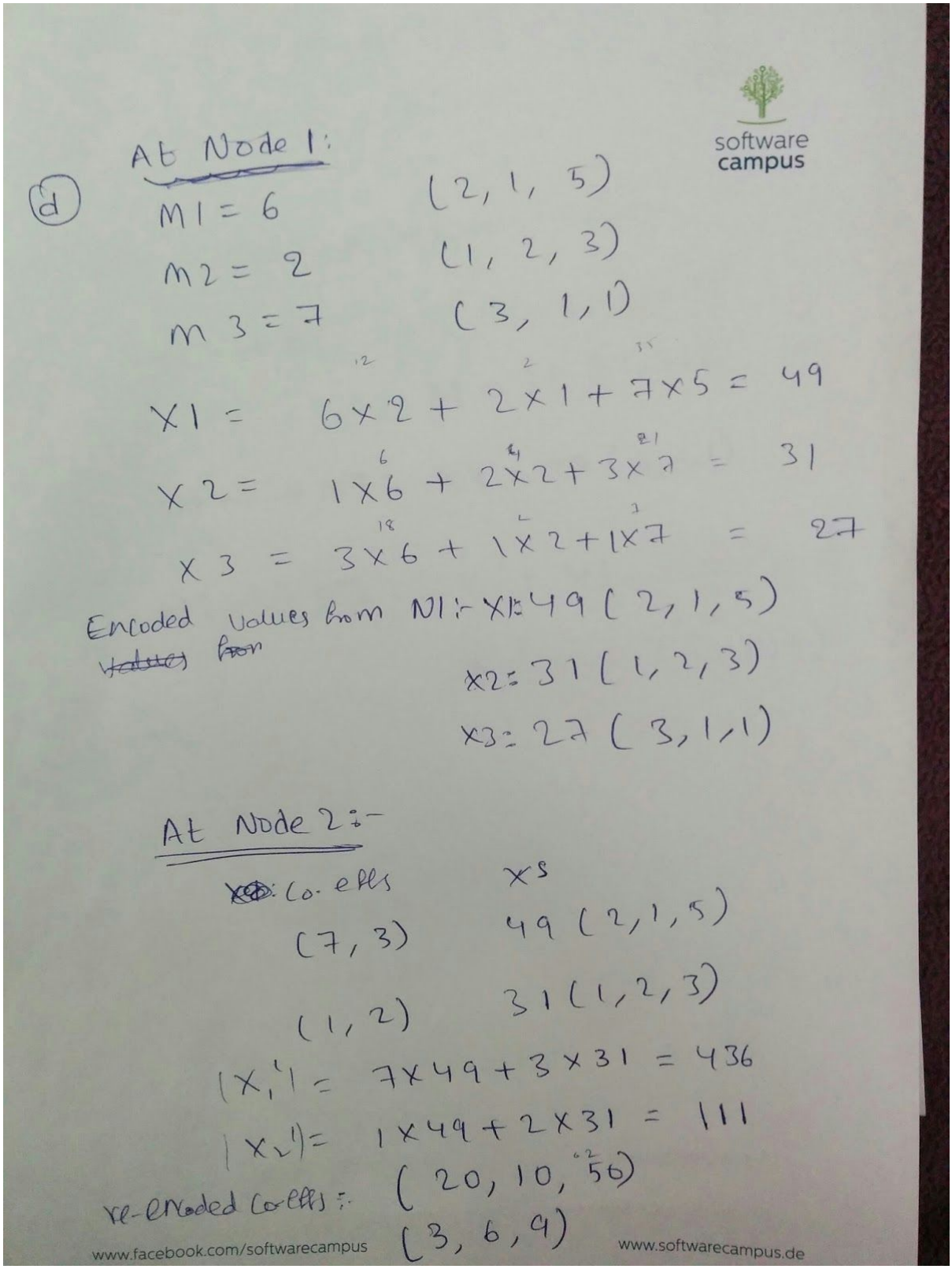
67 (2,3,1)

991 (36,54,27)

212 (4,2,6)

Indep. equations so, Solvable.

D. Written solution



X_1' = 436 (20, 10, 50)

X_2' = 111 (3, 6, 9)

→ Info exchanged between nodes.

N1 ⟶ N2 : X_1 = 49 (2, 1, 5)

X2 = 31 (1, 2, 3)

N1 ⟶ N3 : X3 = 27 (3, 1, 1)

N2 ⟶ N3 : X_1' = 436 (20, 10, 50)

X_2' = 111 (3, 6, 9)