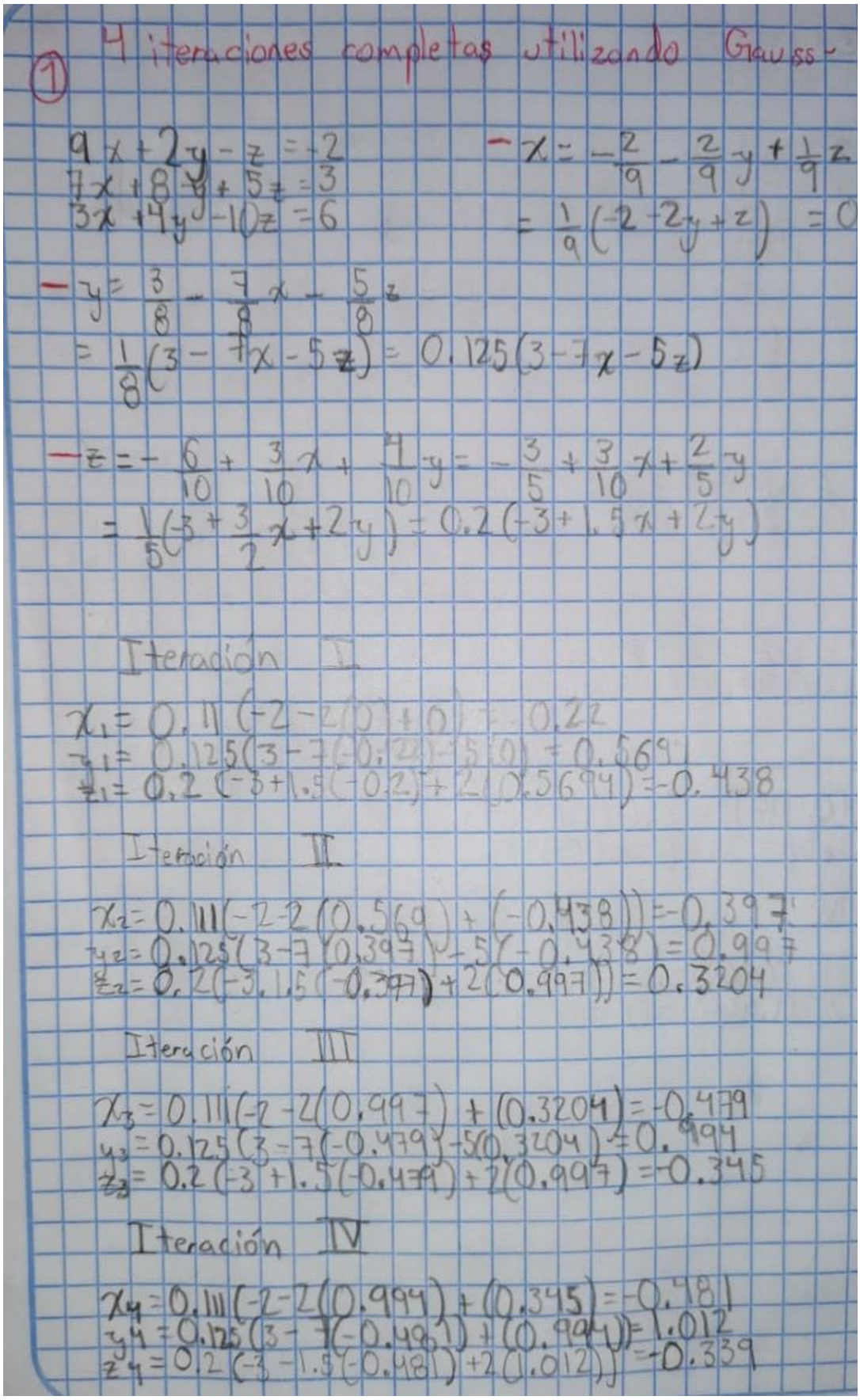
Gauss


① 4 iteraciones completas utilizando Gauss-
9x + 2y - z = -2
7x + 8y + 5z = 3
3x + 4y - 10z = 6
Iteración I
Iteración II
Iteración III
Iteración IV

Nombre: Ramírez Villarreal Axel | Día | Mes

Tema:

② $5x_1 + 2x_2 = 12$
$-x_1 + 10x_2 = 8$

$x_1 = \frac{12}{5} - \frac{2}{5}x_2 = \frac{1}{5}(12 - 2x_2) = 0.2(12 - 2x_2)$

$x_2 = \frac{8}{10} + \frac{1}{10}x_1 = \frac{1}{5}(4 + \frac{1}{2}x_1) = 0.2(4 + 0.5x_1)$

$x_{10} = 0$
$x_{20} = 0$

Iteración I

$x_{11} = 0.2(12 - 2(0)) = 2.4$
$x_{21} = 0.2(4 + 0.5(2.4)) = 1.04$

Iteración II

$x_{12} = 0.2(12 - 2(1.04)) = 1.984$
$x_{22} = 0.2(4 + 0.5(0.984)) = 0.998$

Iteración III

$x_{13} = 0.2(12 - 2(0.998)) = 2.0006$
$x_{23} = 0.2(4 + 0.5(2.0006)) = 1.00006$

Iteración IV

$x_{14} = 0.2(12 - 2(1.00006)) = 1.999$
$x_{24} = 0.2(4 + 0.5(1.999)) = 0.999$

Nombre: Ramírez Villarreal Axel | Día | Mes

Tema:

③ $8x_1 + x_2 = 4$
$2x_1 + 5x_2 = 3$
$x_1 + 4x_3 = 3$

$x_1 = \frac{4}{8} - \frac{1}{8}x_2 = \frac{1}{2} - \frac{1}{8}x_2 = \frac{1}{2}\left(1 - \frac{1}{4}x_2\right) = 0.5(1 - 0.2$

$x_2 = \frac{3}{5} - \frac{2}{5}x_1 = \frac{1}{5}(3 - 2x_1) = 0.2(3 - 2x_1)$

$x_3 = \frac{3}{4} - \frac{1}{4}x_3 = \frac{1}{4}(3 - x_1) = 0.25(3 - x_1)$

Iteración I

$x_{11} = 0.5(1 - 0.25(0)) = 0.5$
$x_{21} = 0.2(3 - 2(0.5)) = 0.4$
$x_{31} = 0.25(3 + (0.5)) = 0.6875$

Iteración II

$x_{12} = 0.5(1 - 0.25(0.4)) = 0.45$
$x_{22} = 0.2(3 - 2(0.5)) = 0.42$
$x_{32} = 0.25(3 - (0.45)) = 0.637$

Iteración III

$x_{13} = 0.5(1 - 0.25(0.42)) = 0.4475$
$x_{23} = 0.2(3 - 2(0.447)) = 0.421$
$x_{33} = 0.25(3 - (0.45)) = 0.638$

Iteración IV

$x_{14} = 0.5(1 - 0.25(0.421)) = 0.447$
$x_{24} = 0.2(3 - 2(0.447)) = 0.42105$
$x_{34} = 0.25(3 - (0.447)) = 0.638$

Nombre: Ramírez Villarreal Axel | Día | Mes | Año | F

Tema:

(9)

$$6x_1 + 2x_2 + x_3 = 22$$
$$-x_1 + 8x_2 + 2x_3 = 20$$
$$x_1 - x_2 + 6x_3 = 23$$

$$x_1 = \frac{22}{6} - \frac{2}{6}x_2 - \frac{1}{6}x_3 = \frac{11}{3} - \frac{1}{3}x_2 - \frac{1}{6}x_3 = \frac{1}{3}\left(11 - x_2 - \frac{1}{2}x_3\right)$$
$$= 0.333(11 - x_2 - 0.5x_3)$$

$$x_2 = \frac{20}{8} + \frac{1}{8}x_1 - \frac{2}{8}x_3 = \frac{5}{2} + \frac{1}{8}x_1 - \frac{1}{4}x_3$$
$$= \frac{1}{2}\left(5 + \frac{1}{4}x_1 - \frac{1}{2}x_3\right) = 0.5(5 + 0.25x_1 - 0.5x_3)$$

$$x_3 = \frac{23}{6} - \frac{1}{6}x_1 + \frac{1}{6}x_2 = \frac{1}{6}(23 - x_1 + x_2) = 0.16(23 - x_1 + x_2)$$

Iteración I

$x_{11} = 0.333(11 - (0) - 0.5(0)) = 3.663$
$x_{21} = 0.5(5 + 0.25(3.663) - 0.5(0)) = 2.958$
$x_{31} = 0.166(23 - 3.663 + (2.958)) = 3.715$

Iteración II

$x_{12} = 0.333(11 - (2.958) - 0.5(3.715)) = 2.061$
$x_{22} = 0.5(5 + 0.25(2.061) - 0.5(3.715)) = 1.828$
$x_{32} = 0.166(23 - (2.061) + (1.828)) = 3.794$

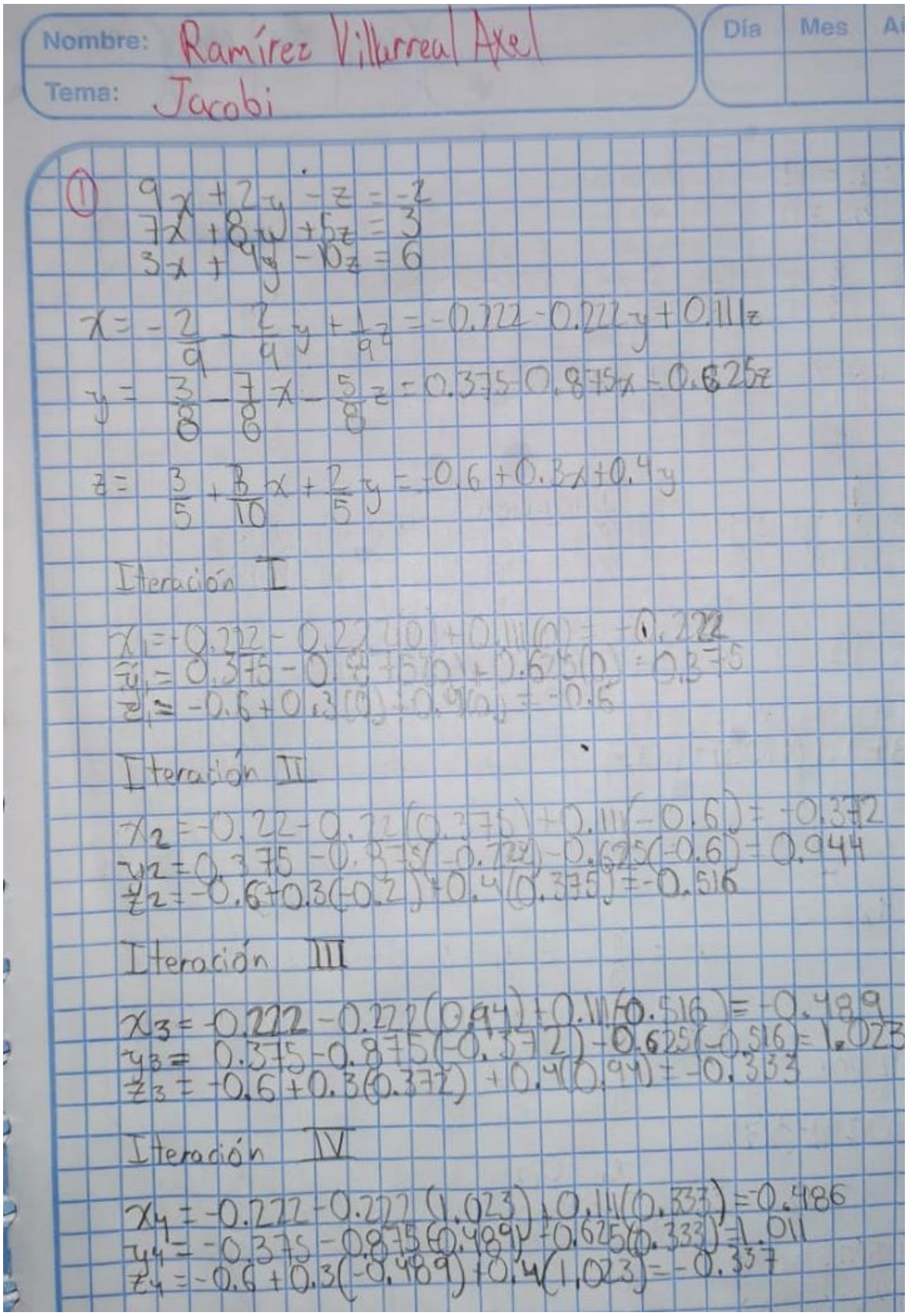
Iteración III

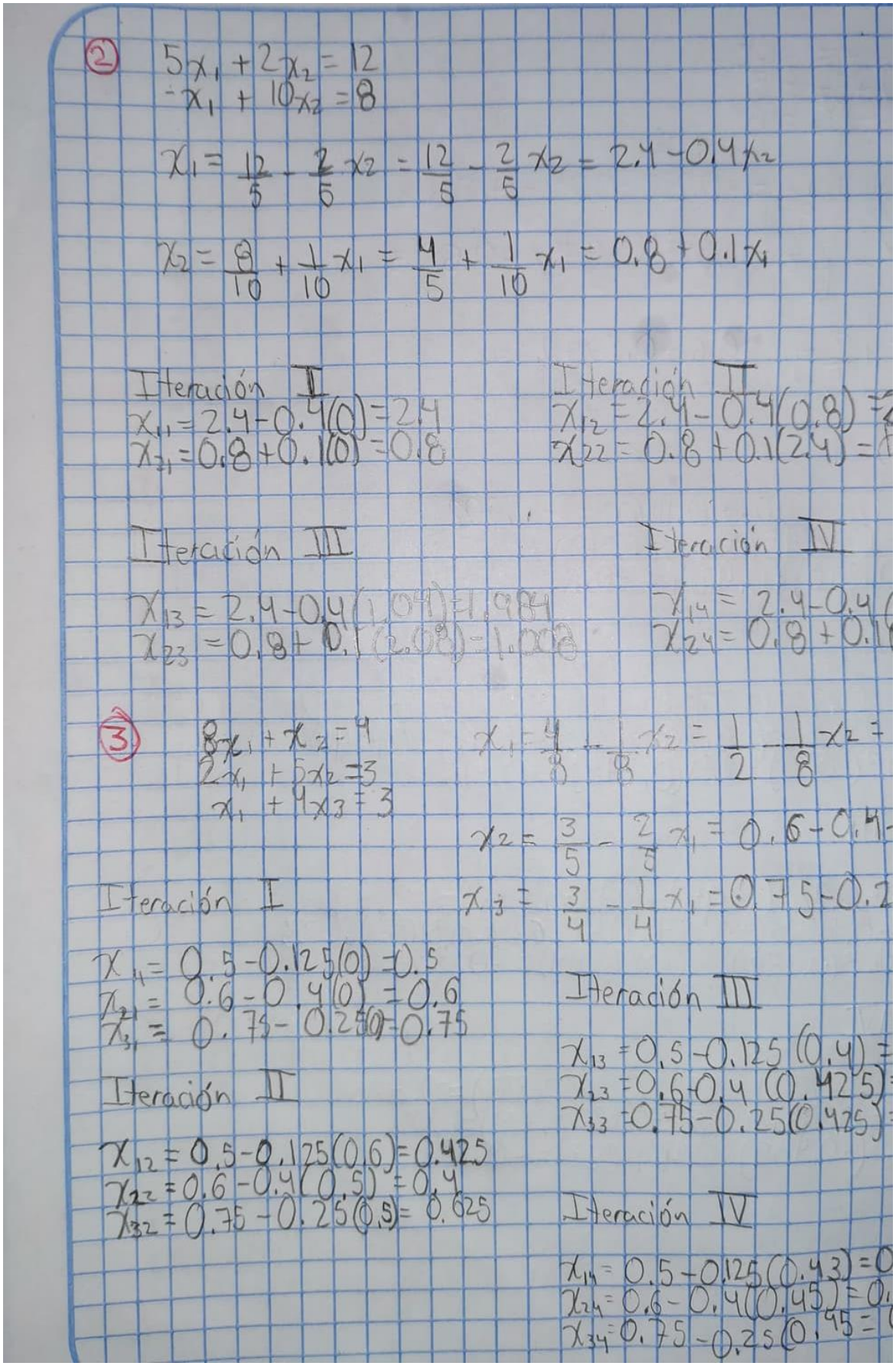
$x_{13} = 0.333(11 - (1.828) - 0.5(3.794)$
$x_{23} = 0.5(5 + 0.25(2.924) - 0.5(3.794)$
$x_{33} = 0.166(23 - (2.424) + (1.854) = 3.738$

Iteración IV

$x_{14} = 0.333(11 - (1.854) - 0.5(3.738)) = 2.425$
$x_{24} = 0.5(5 + 0.25(2.425) - 0.5(3.738)) = 1.868$
$x_{34} = 0.166(23 - (2.425) + (1.868)) = 3.7405$

Jacobi


Nombre: Ramírez Villarreal Axel
Tema: Jacobi
Día
Mes
① 9x + 2y − z = −2
7x + 8y + 5z = 3
3x + 4y − 10z = 6
x = −2/9 − 2/9 y + 1/9 z = −0.222 − 0.222y + 0.111z
y = 3/8 − 7/8 x − 5/8 z = 0.375 − 0.875x − 0.625z
z = 3/5 + 3/10 x + 2/5 y = 0.6 + 0.3x + 0.4y
Iteración I
x1 = −0.222 − 0.222(0) + 0.111(0) = −0.222
y1 = 0.375 − 0.875(0) + 0.625(0) = 0.375
z1 = −0.6 + 0.3(0) + 0.4(0) = −0.6
Iteración II
x2 = −0.22 − 0.22(0.375) + 0.111(−0.6) = −0.372
y2 = 0.375 − 0.875(−0.222) − 0.625(−0.6) = 0.944
z2 = −0.6 + 0.3(−0.2) + 0.4(0.375) = −0.516
Iteración III
x3 = −0.222 − 0.22(0.94) + 0.11(0.516) = −0.489
y3 = 0.375 − 0.875(−0.372) − 0.625(−0.516) = 1.023
z3 = −0.6 + 0.3(0.372) + 0.4(0.94) = −0.333
Iteración IV
x4 = −0.222 − 0.222(1.023) + 0.11(0.333) = −0.486
y4 = −0.375 − 0.875(0.489) + 0.625(0.333) = 1.011
z4 = −0.6 + 0.3(−0.489) + 0.4(1.023) = −0.337



② $5x_1 + 2x_2 = 12$
$-x_1 + 10x_2 = 8$

$x_1 = \frac{12}{5} - \frac{2}{5}x_2 = \frac{12}{5} - \frac{2}{5}x_2 = 2.4 - 0.4x_2$

$x_2 = \frac{8}{10} + \frac{1}{10}x_1 = \frac{4}{5} + \frac{1}{10}x_1 = 0.8 + 0.1x_1$

Iteración I
$x_{11} = 2.4 - 0.4(0) = 2.4$
$x_{21} = 0.8 + 0.1(0) = 0.8$

Iteración II
$x_{12} = 2.4 - 0.4(0.8) =$
$x_{22} = 0.8 + 0.1(2.4) =$

Iteración III
$x_{13} = 2.4 - 0.4(1.04) = 1.984$
$x_{23} = 0.8 + 0.1(2.08) = 1.008$

Iteración IV
$x_{14} = 2.4 - 0.4($
$x_{24} = 0.8 + 0.1$

③ $8x_1 + x_2 = 4$
$2x_1 + 5x_2 = 3$
$x_1 + 4x_3 = 3$

$x_1 = \frac{4}{8} - \frac{1}{8}x_2 = \frac{1}{2} - \frac{1}{8}x_2 =$

$x_2 = \frac{3}{5} - \frac{2}{5}x_1 = 0.6 - 0.4$

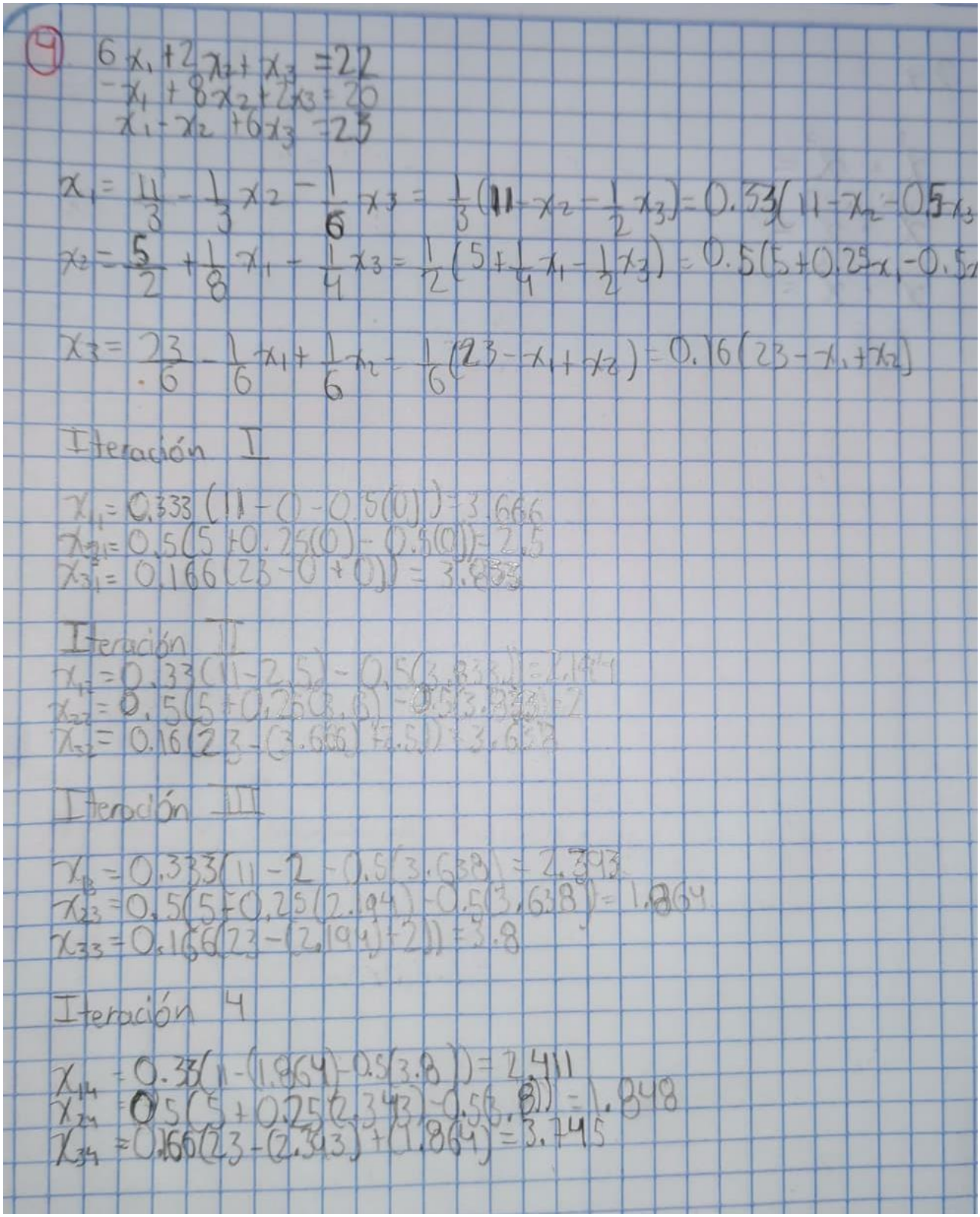
$x_3 = \frac{3}{4} - \frac{1}{4}x_1 = 0.75 - 0.2$

Iteración I
$x_1 = 0.5 - 0.125(0) = 0.5$
$x_2 = 0.6 - 0.4(0) = 0.6$
$x_3 = 0.75 - 0.25(0) = 0.75$

Iteración II
$x_{12} = 0.5 - 0.125(0.6) = 0.425$
$x_{22} = 0.6 - 0.4(0.5) = 0.4$
$x_{32} = 0.75 - 0.25(0.5) = 0.625$

Iteración III
$x_{13} = 0.5 - 0.125(0.4) =$
$x_{23} = 0.6 - 0.4(0.425) =$
$x_{33} = 0.75 - 0.25(0.425) =$

Iteración IV
$x_{14} = 0.5 - 0.125(0.43) = 0$
$x_{24} = 0.6 - 0.4(0.45) = 0.$
$x_{34} = 0.75 - 0.25(0.45 =$



9) $6x_1 + 2x_2 + x_3 = 22$
$-x_1 + 8x_2 + 2x_3 = 20$
$x_1 - x_2 + 6x_3 = 23$

$x_1 = \frac{11}{3} - \frac{1}{3}x_2 - \frac{1}{6}x_3 = \frac{1}{3}(11 - x_2 - \frac{1}{2}x_3) = 0.33(11 - x_2 - 0.5x_3$

$x_2 = \frac{5}{2} + \frac{1}{8}x_1 - \frac{1}{4}x_3 = \frac{1}{2}(5 + \frac{1}{4}x_1 - \frac{1}{2}x_3) = 0.5(5 + 0.25x_1 - 0.5x_3$

$x_3 = \frac{23}{6} - \frac{1}{6}x_1 + \frac{1}{6}x_2 = \frac{1}{6}(23 - x_1 + x_2) = 0.16(23 - x_1 + x_2)$

Iteración I

$x_1 = 0.333(11 - (0) - 0.5(0)) = 3.666$
$x_2 = 0.5(5 + 0.25(0) - 0.5(0)) = 2.5$
$x_3 = 0.166(23 - 0 + 0)) = 3.833$

Iteración II

$x_1 = 0.33(11 - 2.5) - 0.5(3.833)) = 2.147$
$x_2 = 0.5(5 + 0.25(3.6) - 0.5(3.833)) = 2$
$x_3 = 0.16(23 - (3.666) + 3.5)) = 3.622$

Iteración III

$x_1 = 0.333(11 - 2 - 0.5(3.638)) = 2.393$
$x_2 = 0.5(5 + 0.25(2.147) - 0.5(3.638)) = 1.864$
$x_3 = 0.166(23 - (2.147) + 2)) = 3.8$

Iteración 4

$x_1 = 0.33(1 - (1.864) - 0.5(3.8)) = 2.411$
$x_2 = 0.5(5 + 0.25(2.393) - 0.5(3.8)) = 1.848$
$x_3 = 0.166(23 - (2.393) + (1.864)) = 3.745$