Ejercicios de Sistemas de ecuaciones lineales

1) Hallar la solución de los siguientes sistemas de ecuaciones:

a) $\left.\begin{array}{r} x+3y+6z=0 \\ 4x-y+8z=21 \\ 4x-2y+3z=0 \end{array}\right\}$ **b)** $\left.\begin{array}{r} 2x-y=9 \\ x-y-8z=-50 \\ x-8y-3z=6 \end{array}\right\}$ **c)** $\left.\begin{array}{r} x-7y-8z=-15 \\ 4x+y+5z=14 \\ x-8y-5z=-9 \end{array}\right\}$

d) $\left.\begin{array}{r} x+4y-9z=-48 \\ x-3y=-27 \\ x+7y-5z=-2 \end{array}\right\}$ **e)** $\left.\begin{array}{r} x-2y-3z=-35 \\ 2x-y-z=1 \\ 6x-2y-z=30 \end{array}\right\}$ **f)** $\left.\begin{array}{r} 3x+5y+6z=29 \\ x+7y-8z=-35 \\ 2x-8y+3z=3 \end{array}\right\}$

2) Resolver los siguientes sistemas de ecuaciones:

a) $\left.\begin{array}{r} 5x-18y+20z=-2 \\ 5x+12y-20z=-2 \\ 10x-21y-12z=-36 \end{array}\right\}$ **b)** $\left.\begin{array}{r} x+4y+15z=7 \\ x+4y-18z=-15 \\ 7x+24y+18z=-12 \end{array}\right\}$ **c)** $\left.\begin{array}{r} 8x+12y-2z=-3 \\ 12x-21y-10z=-9 \\ 12x-3y+12z=40 \end{array}\right\}$

d) $\left.\begin{array}{r} 2x+16y-8z=13 \\ 2y+3z=0 \\ 8x+16y+6z=-3 \end{array}\right\}$ **e)** $\left.\begin{array}{r} x-24y-12z=13 \\ 7x+4y-6z=-25 \\ 3x+12y+12z=-16 \end{array}\right\}$ **f)** $\left.\begin{array}{r} 16x+8y-15z=45 \\ 20y-21z=37 \\ 8x+20y-15z=49 \end{array}\right\}$

Soluciones:

1)

a) $x=-9,\ \ y=-9,\ \ z=6$

b) $x=3,\ \ y=-3,\ \ z=7$

c) $x=1,\ \ y=0,\ \ z=2$

d) $x=-9,\ \ y=6,\ \ z=7$

e) $x=9,\ \ y=7,\ \ z=10$

f) $x=-2,\ \ y=1,\ \ z=5$

2)

a) $x=\frac{2}{5},\ \ y=\frac{4}{3},\ \ z=1$

b) $x=-6,\ \ y=\frac{3}{4},\ \ z=\frac{2}{3}$

c) $x=\frac{3}{4},\ \ y=\frac{-1}{3},\ \ z=\frac{5}{2}$

d) $x=\frac{-3}{2},\ \ y=\frac{3}{4},\ \ z=\frac{-1}{2}$

e) $x=-3,\ \ y=\frac{-3}{4},\ \ z=\frac{1}{6}$

f) $x=\frac{7}{4},\ \ y=\frac{3}{2},\ \ z=\frac{-1}{3}$