

## 4. ECUACIONES Y SISTEMAS

1. Halla la solución de los siguientes sistemas, analítica y gráficamente:

$$\begin{array}{llll}
 \text{a) } \left. \begin{array}{l} \frac{x}{3} + \frac{y}{2} = 3 \\ \frac{x}{2} + \frac{y}{2} = 4 \end{array} \right\} &
 \text{b) } \left. \begin{array}{l} y - 4x - 2 = 0 \\ y = x^2 + 3x \end{array} \right\} &
 \text{c) } \left. \begin{array}{l} y = x^2 - 2x \\ y + x - 6 = 0 \end{array} \right\} &
 \text{d) } \left. \begin{array}{l} \frac{x-1}{3} + \frac{y}{2} = 2 \\ 3x + y = 7 \end{array} \right\} &
 \text{e) } \left. \begin{array}{l} y = x^2 - 3x \\ y - 2x + 6 = 0 \end{array} \right\}
 \end{array}$$

2. Halla las soluciones de estos sistemas:

$$\begin{array}{llll}
 \text{a) } \left. \begin{array}{l} y = 3x + 1 \\ \sqrt{x+y+4} = y - x \end{array} \right\} &
 \text{b) } \left. \begin{array}{l} \frac{3}{x} - \frac{x}{y} = 0 \\ 2x - y = 3 \end{array} \right\} &
 \text{c) } \left. \begin{array}{l} \frac{2}{x} + \frac{3}{y} = 3 \\ x + y = 4 \end{array} \right\} &
 \text{d) } \left. \begin{array}{l} 2x + y = 6 \\ \sqrt{x} - y = -3 \end{array} \right\} \\
 \text{e) } \left. \begin{array}{l} \frac{1}{x+y} = \frac{2}{5} \\ \frac{1}{x} + \frac{1}{y} = \frac{5}{2} \end{array} \right\} &
 \text{f) } \left. \begin{array}{l} 2\log x + \log y = 1 \\ \log x - 2\log y = -2 \end{array} \right\} &
 \text{g) } \left. \begin{array}{l} 2^{x+y} = 32 \\ \ln x + \ln y = \ln 6 \end{array} \right\} &
 \text{h) } \left. \begin{array}{l} 2\log x - \log y = 0 \\ 2^{y+2x} = 8 \end{array} \right\} \\
 \text{i) } \left. \begin{array}{l} y^2 - x = 2 \\ \log(x+y) = 1 \end{array} \right\} &
 \text{j) } \left. \begin{array}{l} 2^{x+1} + 2^y = 8 \\ \log y - \log x = \log 2 \end{array} \right\} &
 \text{k) } \left. \begin{array}{l} x - y = 9 \\ \log x - \log y = 1 \end{array} \right\} &
 \text{l) } \left. \begin{array}{l} y^2 - x^2 = -3 \\ xy = -2 \end{array} \right\} \\
 \text{m) } \left. \begin{array}{l} 3\sqrt{x+1} = y - 2 \\ 3x + y = -1 \end{array} \right\} &
 \text{n) } \left. \begin{array}{l} \frac{1}{x} - \frac{1}{y} = \frac{1}{6} \\ 2x - y = 1 \end{array} \right\} &
 \text{ñ) } \left. \begin{array}{l} x - 2y = 0 \\ 2^x + 2^y = 6 \end{array} \right\} &
 \text{o) } \left. \begin{array}{l} x - 2y = -1 \\ \frac{1}{x} + \frac{1}{y} = \frac{5}{6} \end{array} \right\} \\
 \text{p) } \left. \begin{array}{l} x^2 + y^2 = 13 \\ xy = 6 \end{array} \right\} &
 \text{q) } \left. \begin{array}{l} y = 5 - \sqrt{x} \\ x = y^2 - 2y + 1 \end{array} \right\} &
 &
 \end{array}$$

3. Obtén, mediante el método de Gauss, la solución de los siguientes sistemas de ecuaciones:

$$\begin{array}{lll}
 \text{a) } \left\{ \begin{array}{l} 3x + 2y + z = 7 \\ 2x - 2y - z = 8 \\ x + 5y + z = -2 \end{array} \right. &
 \text{b) } \left\{ \begin{array}{l} 3x + y - 2z = -6 \\ 2x - y + 3z = -8 \\ x + y - z = 4 \end{array} \right. &
 \text{c) } \left\{ \begin{array}{l} -2x - y + z = -4 \\ 3x + y - 2z = 6 \\ 2x + y + z = 6 \end{array} \right. \\
 \text{d) } \left\{ \begin{array}{l} 2x - y + 2z = 2 \\ x + 2y - z = 3 \\ 2x - y + 3z = 1 \end{array} \right. &
 \text{e) } \left\{ \begin{array}{l} x + 2y - 2z = 6 \\ x - 3y + z = -7 \\ 2x - y + z = -3 \end{array} \right. &
 \text{f) } \left\{ \begin{array}{l} x + y - z = 2 \\ 2x - 2y + 3z = 1 \\ x + 2y - z = 4 \end{array} \right. \\
 \text{g) } \left\{ \begin{array}{l} x - 2y + z = 6 \\ 3x + y - z = 7 \\ x - y + 2z = 6 \end{array} \right. &
 \text{h) } \left\{ \begin{array}{l} x - y + 2z = 7 \\ x + y - 3z = -5 \\ 2x - y + 2z = 9 \end{array} \right. &
 \text{i) } \left\{ \begin{array}{l} x + y + 2z = 6 \\ x - 3y - z = 1 \\ x - y - z = -1 \end{array} \right.
 \end{array}$$