

1. Reduce:

a)  $(5\sqrt{2} + \sqrt{3})(\sqrt{2} + 4\sqrt{3}) - (3\sqrt{2} - 5)^2$       b)  $\log_{\sqrt{2}} \frac{1}{8} + \log_{\frac{1}{2}} \sqrt{8}$

2. Resuelve:

$$8x^4 + 18x^3 - 21x^2 - 44x + 12 = 0$$

3. Resuelve:

$$\frac{15}{x-2} - \frac{12x+6}{x^2-4} = \frac{18}{x+2}$$

4. Resuelve:

$$\sqrt{4x+5} - \sqrt{3x+1} = 1$$

5. Resuelve:

$$3^{-x} + 3^{x+5} = 84$$

6. Resuelve:

$$\log_2(1-5x) - \log_2(x+5) = 3$$

7. Resuelve:

$$\left. \begin{array}{l} 3x - y + 2z = 0 \\ 4x - 2y - z = 8 \\ -x + 3y - 3z = 2 \end{array} \right\}$$

8. Resuelve:

$$\left. \begin{array}{l} x + 2y \leq 13 \\ 3x - y \geq 4 \\ y \geq 2 \end{array} \right\}$$

## Soluciones

1. a)  $21\sqrt{6} + 30\sqrt{2} - 21$       b)  $-\frac{15}{2}$
2.  $-2$  (doble),  $\frac{3}{2}$  y  $\frac{1}{4}$
3. 4.
4. 1 y 5
5.  $-1$  y  $-4$
6.  $-3$
7.  $(1, -1, -2)$
- 8.

