

Exercice 1 (Résoudre dans \mathbb{R}) :

1. $4x^4 - 11x^2 - 3 = 0$

2. $8|x|^2 + 2|x| - 3 = 0$

3. $4\left(\frac{1}{t}\right)^2 - 9\left(\frac{1}{t}\right) + 5 = 0$

4. $6z - \sqrt{z} = 15$

5. $\begin{cases} x + y = -2 \\ xy = -24 \end{cases}$

6. $\begin{cases} x^2 + y^2 = 3 \\ xy = \sqrt{2} \end{cases}$

7. $2 \cos^2(x) - \cos(x) = 1$

8. $4 \sin(x) + 2(\sqrt{3} - \sqrt{2}) \sin(x) - \sqrt{6} = 0$ (Démontrer que $\Delta = (2\sqrt{3} + 2\sqrt{2})^2$)

9. $\begin{cases} \cos(x) + \cos(y) = 1 - \frac{\sqrt{2}}{2} \\ \cos(x) \cos(y) = -\frac{\sqrt{2}}{2} \end{cases}$