

4.- $\cos 2x + 1 = \cos x$

$$\cos^2 x - \operatorname{sen}^2 x + 1 = \cos x$$

$$\cos^2 x - (1 - \cos^2 x) + 1 = \cos x$$

$$\cos^2 x - 1 + \cos^2 x + 1 - \cos x = 0$$

$$2\cos^2 x - \cos x = 0$$

$$\cos x(2\cos x - 1) = 0$$

$$\cos x = 0 \Rightarrow x_1 = 90^\circ; \quad x_2 = 270^\circ$$

$$2\cos x - 1 = 0; \quad \cos x = \frac{1}{2} \Rightarrow x_3 = 60^\circ; \quad x_4 = 300^\circ$$

5.- $2\operatorname{sen}^2 x + 3\cos x = 0$

$$2(1 - \cos^2 x) + 3\cos x = 0$$

$$2 - 2\cos^2 x + 3\cos x = 0$$

$$2\cos^2 x - 3\cos x - 2 = 0$$

$$\cos x = \frac{3 \pm \sqrt{9+16}}{4} = \frac{3 \pm 5}{4} = \left\langle \begin{array}{l} -\frac{1}{2} \\ 2 \end{array} \right. \quad (\text{la solución } \cos x = 2 \text{ no es válida})$$

$$\cos x = -\frac{1}{2} \Rightarrow \begin{cases} x_1 = 120^\circ \\ x_2 = 240^\circ \end{cases}$$

6.- $2\cos^2 x + 3\cos x = 2$

$$2\cos^2 x + 3\cos x - 2 = 0$$

$$\cos x = \frac{-3 \pm \sqrt{9+16}}{4} = \frac{-3 \pm 5}{4} = \left\langle \begin{array}{l} \frac{1}{2} \\ -2 \end{array} \right. \quad (\text{la solución } \cos x = -2 \text{ no es válida})$$

$$\cos x = \frac{1}{2} \Rightarrow \begin{cases} x_1 = 60^\circ \\ x_2 = 300^\circ \end{cases}$$