Idea feliz:

$$-\sin x\cos x = -3\sin x\cos x + 2\sin x\cos x$$

Substituim:

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

treiem factor comú:

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

treiem factor comú de $\sin x + \cos x$

$$(\sin x + \cos x)(2\sin x - 3\cos x) = 0 \iff$$

$$\iff \begin{cases} \sin x + \cos x = 0 \iff \sin x = -\cos x \iff \\ \iff \operatorname{tg} x = -1 \iff \boxed{x = \frac{3\pi}{4} + \pi k \text{ rad.}} \quad k \in \mathbb{Z} \\ \text{o} \\ 2\sin x - 3\cos x = 0 \iff 2\sin x = 3\cos x \iff \\ \iff \operatorname{tg} x = \frac{3}{2} \iff \boxed{x = 0'98279 + \pi k \text{ rad.}} \quad k \in \mathbb{Z} \end{cases}$$

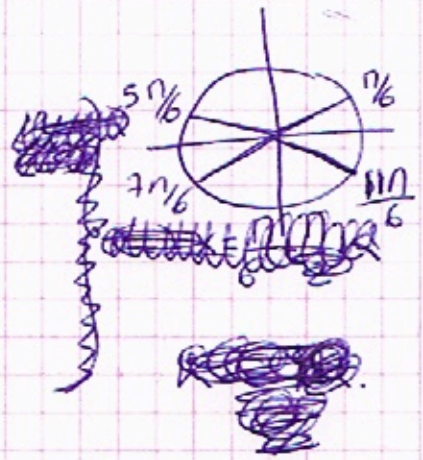
k) $\cos^2 x - 3\sin^2 x = 0$

Com $\cos^2 x = 1 - \sin^2 x$

$$1 - \sin^2 x - 3\sin^2 x = 0$$

$$4\sin^2 x = 1$$

$$\sin^2 x = \frac{1}{4} \iff \sin x = \begin{cases} -\frac{1}{2} \\ \frac{1}{2} \end{cases}$$



Per tant $x = \begin{cases} \frac{\pi}{6} + \pi k \\ \frac{5\pi}{6} + \pi k \end{cases} \quad k \in \mathbb{Z}$

l) $\sin(2x + 60°) + \sin(x + 30°) = 0$

Apliquem la fórmula del ~~sinus de la suma~~ sinus de l'angle doble