Ecuaciones y sistemas trigonométricos

Resolver las siguientes ecuaciones trigonométricas:

1. $\text{sen}2x = \cos 60^\circ$
2. $\text{tg}2x = -\text{tg}x$
3. $\text{sen}^2x - \cos^2 x = 1/2$
4. $\text{sen}x = \text{sen}(45^\circ - x)$
5. $sen(x+45^\circ) = \frac{\sqrt{3}}{2}$
6. $senx + \sqrt{3}\cos x = 2$
7. $tgx \cdot \sec x = \sqrt{2}$
8. $\frac{sen^2 x}{2} = \frac{tgx}{4}$
9. $4tgx = \frac{\sqrt{3}}{\cos^2 x}$
10. $tg(x-45^\circ) + tg(x+45^\circ) = 2ctgx$
11. $\cos x \cdot \cos 2x + 2\cos^2 x = 0$
12. $\cos 2x + senx = 4sen^2 x$
13. $2tgx - 3ctgx - 1 = 0$
14. $sen2x \cdot \cos x = 6sen^3 x$
15. $\cos x = \frac{2tgx}{1+tg^2 x}$
16. $3\cos x = 2\sec x - 5$
17. $\frac{sen(x+30^\circ)}{\cos(x+60^\circ)} = 1$
18. $4sen\frac{x}{2} + 2\cos x = 3$
19. $4sen(x-30^\circ)\cos(x-30^\circ) = \sqrt{3}$
20. $tg\frac{x}{2} = \frac{tgx-2}{tgx+2}$
21. $3sen^2 x - 5senx + 2 = 0$
22. $\cos 2x = 5 - 6\cos^2 x$
23. $\cos 2x + 5\cos x + 3 = 0$
24. $\frac{\cos x}{tgx} = \frac{3}{2}$

Resolver los siguientes sistemas de ecuaciones trigonométricas:

1. $\begin{cases} senx + \cos y = \sqrt{2} \\ \cos ecx + \sec y = 2\sqrt{2} \end{cases}$
2. $\begin{cases} senx\cos y = 3/4 \\ \cos x seny = 1/4 \end{cases}$
3. $\begin{cases} senx + seny = \frac{\sqrt{3}+1}{2} \\ senx - seny = \frac{\sqrt{3}-1}{2} \end{cases}$
4. $\begin{cases} tgx + tgy = 1 \\ ctg(x+y) = 3/4 \end{cases}$
5. $\begin{cases} senx + seny = 3/2 \\ \cos\frac{x-y}{2} = \frac{\sqrt{3}}{2} \end{cases}$
6. $\begin{cases} tg2x = \cot gy \\ tgx = ctg2y \end{cases}$
7. $\begin{cases} sen(x+y) - \cos x\cos y = 0 \\ tgy = 1 \end{cases}$
8. $\begin{cases} \cos(x+y) = 1/2 \\ \cos(x-y) = 1/2 \end{cases}$
9. $\begin{cases} senx + seny = 1 \\ 2x + 2y = 180^\circ \end{cases}$
10. $\begin{cases} senx = \sqrt{2}seny \\ tgx = \sqrt{3}tgy \end{cases}$
11. $\begin{cases} x + y = \frac{2\pi}{3} \\ senx - seny = 0'5 \end{cases}$
12. $\begin{cases} x + y = \pi/4 \\ \sqrt{2}\cos x\cos y = 1 \end{cases}$