Formule trigonometrice

1. $\cos^2 x + \sin^2 x = 1$,
2. $1 + tg^2 x = \frac{1}{\cos^2 x}$ $x \neq \frac{\pi}{2} + k\pi$,
3. $1 + ctg^2 x = \frac{1}{\sin^2 x}$, $x \neq k\pi$.
4. $\sin(x \pm y) = \sin x \cdot \cos y \pm \sin y \cdot \cos x$;
5. $\cos(x \pm y) = \cos x \cdot \cos y \mp \sin x \cdot \sin y$;
6. $\sin 2x = 2\sin x \cdot \cos x$;
7. $\cos 2x = \cos^2 x - \sin^2 x$ din care rezulta:
8. $\cos 2x = 2\cos^2 x - 1$; $\cos 2x = 1 - 2\sin^2 x$ si
9. $|\cos x| = \sqrt{\frac{1+\cos 2x}{2}}$; $|\sin x| = \sqrt{\frac{1-\cos 2x}{2}}$.

Alte formule:

10. $tg(x \pm y) = \frac{tgx \pm tgy}{1 \mp tgxtgy}$; $ctg(x \pm y) = \frac{ctgx \cdot ctgy \mp 1}{ctgy \pm ctgx}$;
11. $tg\,2x = \frac{2tgx}{1 - tg^2 x}$; $ctg\,2x = \frac{ctg^2 x - 1}{2ctgx}$;
12. $tg\,x = \frac{2tg\frac{x}{2}}{1 - tg^2\frac{x}{2}}$; $\sin x = \frac{2tg\frac{x}{2}}{1 + tg^2\frac{x}{2}}$; $\cos x = \frac{1 - tg^2\frac{x}{2}}{1 + tg^2\frac{x}{2}}$.

Formule de transformare a sumei in produs:

13. $\sin a + \sin b = 2\sin\frac{a+b}{2}\cos\frac{a-b}{2}$; $\sin a - \sin b = 2\sin\frac{a-b}{2}\cos\frac{a+b}{2}$;
14. $\cos a + \cos b = 2\cos\frac{a+b}{2}\cos\frac{a-b}{2}$; $\cos a - \cos b = -2\sin\frac{a+b}{2}\sin\frac{a-b}{2}$;
15. $tg\,a + tg\,b = \frac{\sin(a+b)}{\cos a \cos b}$; $tg\,a - tg\,b = \frac{\sin(a-b)}{\cos a \cos b}$;

16. $\mathbf{ctg\ a + ctg\ b = \frac{\sin(a+b)}{\sin a \sin b}}$; $\mathbf{ctg\ a - ctg\ b = \frac{\sin(b-a)}{\sin a \sin b}}$.

Formule de transformarea produsului in suma:

17. $\mathbf{\sin a \cos b = \frac{\sin(a+b)+\sin(a-b)}{2}}$;
18. $\mathbf{\cos a \cos b = \frac{\cos(a+b)+\cos(a-b)}{2}}$;
19. $\mathbf{\sin a \sin b = \frac{\cos(a-b)-\cos(a+b)}{2}}$.