Reducerea la primul cadran:

II – I : $\sin(\pi - x) = \sin x$; $\cos(\pi - x) = -\cos x$; $\operatorname{tg}(\pi - x) = -\operatorname{tg} x$

III – I : $\sin(\pi + x) = -\sin x$; $\cos(\pi + x) = -\cos x$; $\operatorname{tg}(\pi + x) = \operatorname{tg} x$

IV – I : $\sin(2\pi - x) = -\sin x$; $\cos(2\pi - x) = \cos x$; $\operatorname{tg}(2\pi - x) = -\operatorname{tg} x$

$\cos -x = \cos x$; $\sin -x = -\sin x$

Formule trigonometrice pentru suma si diferenta :

$\cos(a+b) = \cos a \cos b - \sin a \sin b$

$\sin(a+b) = \sin a \cos b + \cos a \sin b$

$\cos(a-b) = \cos a \cos b + \sin a \sin b$

$\sin(a-b) = \sin a \cos b - \cos a \sin b$

$$\operatorname{tg}(a+b) = \frac{\operatorname{tg} a + \operatorname{tg} b}{1 - \operatorname{tg} a \operatorname{tg} b}$$

$$\operatorname{tg}(a-b) = \frac{\operatorname{tg} a - \operatorname{tg} b}{1 + \operatorname{tg} a \operatorname{tg} b}$$

Functii trigonometrice cu ∢ complementare:

$\cos\left(\frac{\pi}{2} - a\right) = \sin a$; $\operatorname{tg}\left(\frac{\pi}{2} - a\right) = \operatorname{ctg} a$

$\sin\left(\frac{\pi}{2} - a\right) = \cos a$; $\operatorname{ctg}\left(\frac{\pi}{2} - a\right) = \operatorname{tg} a$

Functii trigonometrice cu ∢ suplementare:

$\cos(\pi - a) = -\cos a$; $\operatorname{tg}(\pi - a) = -\operatorname{tg} a$

$\sin(\pi - a) = \sin a$; $\operatorname{ctg}(\pi - a) = -\operatorname{ctg} a$

Functii trigonometrice ale ∢ dublu:

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

$$\sin 2x = 2\sin x \cos x \quad ; \quad \operatorname{tg} 2x = \frac{2\operatorname{tg} x}{1 - \operatorname{tg}^2 x}$$

Functiile trigonometrice ale unu ∢ in functie de cos dublului sau:

$$\cos^2 x = \frac{1+\cos 2x}{2} \Rightarrow \cos x = \pm\sqrt{\frac{1+\cos 2x}{2}} \quad ; \quad \sin^2 x = \frac{1-\cos 2x}{2} \Rightarrow \sin x = \pm\sqrt{\frac{1-\cos 2x}{2}}$$

$$\operatorname{tg}^2 x = \frac{1-\cos 2x}{1+\cos 2x} \Rightarrow \operatorname{tg} x = \pm\sqrt{\frac{1-\cos 2x}{1+\cos 2x}}$$

Transformarea sumelor in produs:

$$\sin\alpha \pm \sin\beta = 2\sin\frac{1}{2}(\alpha \pm \beta)\cos\frac{1}{2}(\alpha \mp \beta)$$

$$\cos\alpha + \cos\beta = 2\cos\frac{1}{2}(\alpha + \beta)\cos\frac{1}{2}(\alpha - \beta)$$

Transformarea produselor in sume:

$$\cos a * \sin b = \frac{\cos(a+b) + \cos(a-b)}{2} \qquad \sin a * \sin b = \frac{\cos(a-b) - \cos(a+b)}{2} \qquad \sin a * \cos b = \frac{\sin(a+b) + \sin(a-b)}{2}$$

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