Trigonométrie c. op. : côté opposé $\sin \alpha = \frac{c. op.}{hip.}$ hip.: hipoténuse hipoténuse $\cos \alpha = \frac{c. \ adj.}{hip.}$ c. adj.: côté adjacent Identité trigonométrique hip.: hipoténuse côté adjacent $an lpha = rac{c. op.}{c. adj.}$ c. op.: côté opposé c. adj.: côté adjacent $\tan \alpha = \frac{\sin \alpha}{\cos \alpha}$ $\tan^2 \alpha + 1 = \frac{1}{\cos^2 \alpha}$ $\sin^2\alpha + \cos^2\alpha = 1$ Relation de Pythagore $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$ Loi des Sinus $a^2 = b^2 + c^2 - 2bc\cos A$ Loi des Cosinus b $A=\sqrt{s(s-a)(s-b)(s-c)}$ С Formule de Héron $s=\frac{a+b+c}{2}$ $\sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$ $\cos\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2}$ $\tan\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2}$ $\sin\left(\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$ $\cos\left(\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$ $\tan\left(\frac{\pi}{4}\right) = 1$ Points remarquables $\cos\left(\frac{\pi}{2}\right) = \frac{1}{2}$ $\sin\left(\frac{\pi}{2}\right) = \frac{\sqrt{3}}{2}$ $\tan\left(\frac{\pi}{2}\right) = \sqrt{3}$ $\cos(-\alpha) = \cos \alpha$ $\sin(-\alpha) = -\sin\alpha$ $\tan(-\alpha) = -\tan\alpha$ $\sin(\pi - \alpha) = \sin \alpha$ $\cos(\pi - \alpha) = -\cos \alpha \qquad \tan(\pi - \alpha) = -\tan \alpha$ $\sin(\pi + \alpha) = -\sin \alpha$ $\cos(\pi + \alpha) = -\cos \alpha$ $\tan(\pi + \alpha) = \tan \alpha$ $\sin\left(\frac{\pi}{2} - \alpha\right) = \cos\alpha \qquad \cos\left(\frac{\pi}{2} - \alpha\right) = \sin\alpha \qquad \tan\left(\frac{\pi}{2} - \alpha\right) = \frac{1}{\tan\alpha}$ Égalités trigonométriques $\sin\left(\frac{\pi}{2} + \alpha\right) = \cos \alpha \qquad \cos\left(\frac{\pi}{2} + \alpha\right) = -\sin \alpha \quad \tan\left(\frac{\pi}{2} + \alpha\right) = -\frac{1}{\tan \alpha}$ $\sin\left(\frac{3\pi}{2} - \alpha\right) = -\cos\alpha \, \cos\left(\frac{3\pi}{2} - \alpha\right) = -\sin\alpha \, \tan\left(\frac{3\pi}{2} - \alpha\right) = \frac{1}{\tan\alpha}$ $\sin x = \sin lpha \Leftrightarrow x = lpha + 2k\pi \lor x = \pi - lpha + 2k\pi, k \in \mathbb{Z}$ Équations trigonométriques $\cos x = \cos lpha \Leftrightarrow x = lpha + 2k\pi \lor x = -lpha + 2k\pi, k \in \mathbb{Z}$ $an x = an lpha \Leftrightarrow x = lpha + k\pi, k \in \mathbb{Z}$ $\sin(a+b) = \sin a \times \cos b + \sin b \times \cos a$ $\cos(a+b) = \cos a \times \cos b - \sin a \times \sin b$ Expression de l'addition $\tan(a+b) = \frac{\tan a + \tan b}{1 - \tan a \times \tan b}$ $\sin(a-b) = \sin a \times \cos b - \sin b \times \cos a$ $\cos(a-b) = \cos a \times \cos b + \sin a \times \sin b$ Expression de la soustraction $\tan(a-b) = \frac{\tan a - \tan b}{1 + \tan a \times \tan b}$ $\sin(2a) = 2 \times \sin a \times \cos a$ $\cos(2a) = \cos^2 a - \sin^2 a$ Expression de la duplication

 $\tan(2a) = \frac{2 \times \tan a}{1 - \tan^2 a}$