Formulae for the Trigonometric Ratios of Sum and Differences of Two Angles.

(1) $\sin(A+B) = \sin A \cos B + \cos A \sin B$

(2) $\sin(A-B) = \sin A \cos B - \cos A \sin B$

(3) $\cos(A+B) = \cos A \cos B - \sin A \sin B$

(4) $\cos(A-B) = \cos A \cos B + \sin A \sin B$

(5) $\tan(A+B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$

(6) $\tan(A-B) = \dfrac{\tan A - \tan B}{1 + \tan A \tan B}$

(7) $\cot(A+B) = \dfrac{\cot A \cot B - 1}{\cot A + \cot B}$

(8) $\cot(A-B) = \dfrac{\cot A \cot B + 1}{\cot B - \cot A}$

(9) $\sin(A+B).\sin(A-B) = \sin^2 A - \sin^2 B = \cos^2 B - \cos^2 A$

(10) $\cos(A+B).\cos(A-B) = \cos^2 A - \sin^2 B = \cos^2 B - \sin^2 A$

(11) $\tan A \pm \tan B = \dfrac{\sin A}{\cos A} \pm \dfrac{\sin B}{\cos B} = \dfrac{\sin A \cos B \pm \cos A \sin B}{\cos A \cos B} = \dfrac{\sin(A \pm B)}{\cos A . \cos B}$

$\left(A \neq n\pi + \dfrac{\pi}{2}, B \neq m\pi \right)$

(12) $\cot A \pm \cot B = \dfrac{\sin(B \pm A)}{\sin A . \sin B}$

$\left(A \neq n\pi, B \neq m\pi + \dfrac{\pi}{2} \right)$