All trigno formulas

- $\sin(A+B) = \sin A \cdot \cos B + \cos A \cdot \sin B$
- $\sin(A-B) = \sin A \cdot \cos B - \cos A \cdot \sin B$
- $\cos(A+B) = \cos A \cdot \cos B - \sin A \cdot \sin B$
- $\cos(A-B) = \cos A \cdot \cos B + \sin A \cdot \sin B$
- $\tan(A+B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$
- $\tan(A-B) = \dfrac{\tan A - \tan B}{1 + \tan A \cdot \tan B}$
- $\cot(A+B) = \dfrac{\cot B \cdot \cot A - 1}{\cot B + \cot A}$
- $\cot(A-B) = \dfrac{\cot B \cdot \cot A + 1}{\cot B - \cot A}$
- $\sin C + \sin D = 2 \cdot \sin\left(\dfrac{C+D}{2}\right) \cdot \cos\left(\dfrac{C-D}{2}\right)$
- $\sin C - \sin D = 2 \cos\left(\dfrac{C+D}{2}\right) \cdot \sin\left(\dfrac{C-D}{2}\right)$
- $\cos C + \cos D = 2 \cos\left(\dfrac{C+D}{2}\right) \cdot \cos\left(\dfrac{C-D}{2}\right)$
- $\cos C - \cos D = -2 \sin\left(\dfrac{C+D}{2}\right) \cdot \sin\left(\dfrac{C-D}{2}\right)$

  $= 2 \sin\left(\dfrac{C+D}{2}\right) \cdot \sin\left(\dfrac{D-C}{2}\right)$

- $\sin 2x = 2\sin x \cdot \cos x = \frac{2\tan x}{1+\tan^2 x}$

- $\cos 2x = \cos^2 x - \sin^2 x = 2\cos^2 x - 1$
  $= 1 - 2\sin^2 x = \frac{1-\tan^2 x}{1+\tan^2 x}$

- $\tan 2x = \frac{2\tan x}{1-\tan^2 x}$

- $\sin 3x = 3\sin x - 4\sin^3 x$

- $\cos 3x = 4\cos^3 x - 3\cos x$

- $\tan 3x = \frac{3\tan x - \tan^3 x}{1-3\tan^2 x}$

- odd $F(x) \Rightarrow F(-x) = -F(x)$
- Even $F(x) \Rightarrow F(-x) = +F(x)$

$\cos(-x) = \cos x$	$\sec(-x) = \sec x$
$\sin(-x) = -\sin x$	$\operatorname{cosec}(-x) = -\operatorname{cosec} x$
$\tan(-x) = -\tan x$	$\cot(-x) = -\cot x$

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

$\sin^2\theta + \cos^2\theta = 1$	$1 + \cos 2x = 2\cos^2 x$
$\sec^2\theta - \tan^2\theta = 1$	$1 - \cos 2x = 2\sin^2 x$
$\operatorname{cosec}^2\theta - \cot^2\theta = 1$	$\tan x = \frac{1-\cos 2x}{\sin x}$

* General Solution of trigonometry

$\sin x = 0 \Rightarrow x = n\pi$	$\sin x = \sin y \rightarrow x = nx + (-1)^n \cdot y$
$\cos x = 0 \rightarrow x = (2n+1)\frac{\pi}{2}$	$\cos x = \cos y \rightarrow x = 2nx \pm y$
$\tan x = 0 \rightarrow x = n\pi$	$\tan x = \tan y \rightarrow x = nx + y$