

Trig Identities

Function(s)	Alternate form
$\tan(x)$	$\sin(x)/\cos(x)$
$\sec(x)$	$1/\cos(x)$
$\csc(x)$	$1/\sin(x)$
$\cot(x)$	$1/\tan(x)$
$\sin^2(x) + \cos^2(x)$	1
$\tan^2(x) + 1$	$\sec^2$
$\cot^2 + 1$	$\csc^2$
$\sinh(x)$	$(1/2)(e^x - e^{-x})$
$\cosh(x)$	$(1/2)(e^x + e^{-x})$
$\tanh(x)$	$\sinh(x)/\cosh(x)$
$\operatorname{sech}(x)$	$1/\cosh(x)$
$\operatorname{csch}(x)$	$1/\sinh(x)$
$\coth(x)$	$1/\tanh(x)$
$\cosh^2(x) - \sinh^2(x)$	1
$1 - \tanh^2(x)$	$\operatorname{sech}^2(x)$
$\coth^2(x) - 1$	$\operatorname{csch}^2(x)$

Angle Identities

Function	Alternate Form
$\sin(-x)$	$-\sin(x)$
$\cos(-x)$	$\cos(x)$
$\tan(-x)$	$-\tan(x)$
$\sec(-x)$	$\sec(x)$
$\csc(-x)$	$-\csc(x)$
$\cot(-x)$	$-\cot(x)$
$\sin(\pi/2 - x)$	$\cos(x)$
$\cos(\pi/2 - x)$	$\sin(x)$
$\tan(\pi/2 - x)$	
$\sin(\pi/2 + x)$	
$\cos(\pi/2 + x)$	
$\tan(\pi/2 + x)$	
$\sec(\pi/2 + x)$	
$\csc(\pi/2 + x)$	
$\cot(\pi/2 + x)$	

Identities With π

Function	Alternate Form
$\sin(\pi/2 - x)$	$\cos(x)$
$\cos(\pi/2 - x)$	$\sin(x)$
$\tan(\pi/2 - x)$	$\cot(x)$
$\sec(\pi/2 - x)$	$-\sec(x)$
$\csc(\pi/2 - x)$	$\csc(x)$
$\cot(\pi/2 - x)$	$\tan(x)$
$\sin(\pi - x)$	$\sin(x)$
$\cos(\pi - x)$	$-\cos(x)$
$\tan(\pi - x)$	$-\tan(x)$
$\sec(\pi - x)$	$-\sec(x)$
$\csc(\pi - x)$	$\csc(x)$
$\cot(\pi - x)$	$-\cot(x)$
$\sin(3\pi/2 - x)$	$-\cos(x)$
$\cos(3\pi/2 - x)$	$-\sin(x)$
$\tan(3\pi/2 - x)$	$\cot(x)$
$\sec(3\pi/2 - x)$	$-\csc(x)$
$\csc(3\pi/2 - x)$	$-\sec(x)$
$\cot(3\pi/2 - x)$	$\tan(x)$
$\operatorname{trg}(2\pi - x)$	$\operatorname{trg}(-x)$



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