**Trigonometric Identities**

**Quotient Identities**



**Reciprocal identities**



**Sum & Difference Identities**

*sin*(α + β) = *sin*(α)*cos*(β) + *cos*(α)*sin*(β)
*sin*(α – β) = *sin*(α)*cos*(β) – *cos*(α)*sin*(β)
*cos*(α + β) = *cos*(α)*cos*(β) – *sin*(α)*sin*(β)
*cos*(α – β) = *cos*(α)*cos*(β) + *sin*(α)*sin*(β)

 ![tan(a + b) = [tan(a) + tan(b)] / [1 - tan(a)tan(b)], tan(a - b) = [tan(a) - tan(b)] / [1 + tan(a)tan(b)]]()

**Even & Odd Identities**

|  |  |
| --- | --- |
| sin (–*x*) = –sin *x*cos (–*x*) = cos *x*tan (–*x*) = –tan *x* | csc (–*x*) = –csc *x*sec (–*x*) = sec *x*cot (–*x*) = –cot *x* |

**Power-Reducing/Half Angle**

**Formulas**

  or  

 or  

  or    or  

**Co-Function Identities**



**Pythagorean Identities**



**Double Angle Formulas**



**Sum-to-Product Formulas**



**Product-to-Sum Formulas**

