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Negative, Half, Double and Triple Angle Trigonometry Identities Formulas

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List of 24 Negative, Half, Double and Triple Angle Trigonometry Identities Formulas

Negative, Half, Double and Triple Angle Trigonometry Identities

Double Angle Trigonometry Identities

1) Cos 2A

Open Calculator

fx $\cos 2A = \cos A^2 - \sin A^2$

ex $0.768 = (0.94)^2 - (0.34)^2$

2) Cos 2A given Cos A

Open Calculator

fx $\cos 2A = \left(2 \cdot \cos A^2\right) - 1$

ex $0.7672 = \left(2 \cdot (0.94)^2\right) - 1$

3) Cos 2A given Sin A

Open Calculator

fx $\cos 2A = 1 - \left(2 \cdot \sin A^2\right)$

ex $0.7688 = 1 - \left(2 \cdot (0.34)^2\right)$

4) Cos 2A given Tan A

Open Calculator

fx $$\cos 2A = \frac{1 - \tan A^2}{1 + \tan A^2}$$

ex $$0.770538 = \frac{1 - (0.36)^2}{1 + (0.36)^2}$$

5) Cosec 2A

Open Calculator

fx $$\operatorname{cosec} 2A = \frac{\sec A \cdot \operatorname{cosec} A}{2}$$

ex $$1.5476 = \frac{1.06 \cdot 2.92}{2}$$

6) Cot 2A

Open Calculator

fx $$\cot 2A = \frac{\cot A^2 - 1}{2 \cdot \cot A}$$

ex $$1.193182 = \frac{(2.75)^2 - 1}{2 \cdot 2.75}$$

7) Sec 2A

Open Calculator

fx $$\sec 2A = \frac{\sec A^2}{2 - \sec A^2}$$

ex $$1.282063 = \frac{(1.06)^2}{2 - (1.06)^2}$$

8) Sin 2A

Open Calculator

fx $$\sin 2A = 2 \cdot \sin A \cdot \cos A$$

ex $$0.6392 = 2 \cdot 0.34 \cdot 0.94$$

9) Sin 2A given Tan A

Open Calculator

fx $$\sin 2A = \frac{2 \cdot \tan A}{1 + \tan A^2}$$

ex $$0.637394 = \frac{2 \cdot 0.36}{1 + (0.36)^2}$$

10) Tan 2A

Open Calculator

fx $$\tan 2A = \frac{2 \cdot \tan A}{1 - \tan A^2}$$

ex $$0.827206 = \frac{2 \cdot 0.36}{1 - (0.36)^2}$$

Half Angle Trigonometry Identities

11) Cos (A/2)

Open Calculator

fx $$\cos_{(A/2)} = \sqrt{\frac{1+\cos A}{2}}$$

ex $$0.984886 = \sqrt{\frac{1+0.94}{2}}$$

12) Sin (A/2)

Open Calculator

fx $$\sin_{(A/2)} = \sqrt{\frac{1-\cos A}{2}}$$

ex $$0.173205 = \sqrt{\frac{1-0.94}{2}}$$

13) Tan (A/2)

Open Calculator

fx $$\tan_{(A/2)} = \sqrt{\frac{1-\cos A}{1+\cos A}}$$

ex $$0.175863 = \sqrt{\frac{1-0.94}{1+0.94}}$$

14) Tan (A/2) given Sin A and Cos A

Open Calculator

fx $$\tan_{(A/2)} = \frac{1 - \cos A}{\sin A}$$

ex $$0.176471 = \frac{1 - 0.94}{0.34}$$

Negative Angle Identities

15) Cos (-A)

Open Calculator

fx $$\cos_{(-A)} = 1 \cdot \cos A$$

ex $$0.94 = 1 \cdot 0.94$$

16) Cosec (-A)

Open Calculator

fx $$\operatorname{cosec}_{(-A)} = (-\operatorname{cosec} A)$$

ex $$-2.92 = (-2.92)$$

17) Cot (-A)

Open Calculator

fx $$\cot_{(-A)} = (-\cot A)$$

ex $$-2.75 = (-2.75)$$

18) Sec (-A)

Open Calculator

$$\sec_{(-A)} = 1 \cdot \sec A$$

$$1.06 = 1 \cdot 1.06$$

19) Sin (-A)

Open Calculator

$$\sin_{(-A)} = (-\sin A)$$

$$-0.34 = (-0.34)$$

20) Tan (-A)

Open Calculator

$$\tan_{(-A)} = (-\tan A)$$

$$-0.36 = (-0.36)$$

Triple Angle Trigonometry Identities

21) Cos 3A

Open Calculator

$$\cos 3A = \left(4 \cdot \cos A^3\right) - (3 \cdot \cos A)$$

$$0.502336 = \left(4 \cdot (0.94)^3\right) - (3 \cdot 0.94)$$

22) Cot 3A

Open Calculator

fx $$\cot 3A = \frac{3 \cdot \cot A - \cot A^3}{1 - 3 \cdot \cot A^2}$$

ex $$0.57853 = \frac{3 \cdot 2.75 - (2.75)^3}{1 - 3 \cdot (2.75)^2}$$

23) Sin 3A

Open Calculator

fx $$\sin 3A = (3 \cdot \sin A) - \left(4 \cdot \sin A^3\right)$$

ex $$0.862784 = (3 \cdot 0.34) - \left(4 \cdot (0.34)^3\right)$$

24) Tan 3A

Open Calculator

fx $$\tan 3A = \frac{(3 \cdot \tan A) - \tan A^3}{1 - \left(3 \cdot \tan A^2\right)}$$

ex $$1.690681 = \frac{(3 \cdot 0.36) - (0.36)^3}{1 - \left(3 \cdot (0.36)^2\right)}$$

Variables Used

- **cos 2A** Cos 2A
- **cos 3A** Cos 3A
- **cos A** Cos A
- **$\cos_{(-A)}$** Cos -A
- **$\cos_{(A/2)}$** Cos (A/2)
- **cosec 2A** Cosec 2A
- **cosec A** Cosec A
- **$\text{cosec}_{(-A)}$** Cosec -A
- **cot 2A** Cot 2A
- **cot 3A** Cot 3A
- **cot A** Cot A
- **$\cot_{(-A)}$** Cot -A
- **sec 2A** Sec 2A
- **sec A** Sec A
- **$\sec_{(-A)}$** Sec -A
- **sin 2A** Sin 2A
- **sin 3A** Sin 3A
- **sin A** Sin A
- **$\sin_{(-A)}$** Sin -A
- **$\sin_{(A/2)}$** Sin (A/2)
- **tan 2A** Tan 2A
- **tan 3A** Tan 3A
- **tan A** Tan A

- **$\tan_{(-A)}$** Tan -A
- **$\tan_{(A/2)}$** Tan (A/2)

Constants, Functions, Measurements used

- Function: **sqrt**, sqrt(Number)
  A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.

Check other formula lists

- **Negative, Half, Double and Triple Angle Trigonometry Identities Formulas**
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