

Trigonometric Formula Sheet

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

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

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. $\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$

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

7. $\sin(-A) = -\sin A$

8. $\cos(-A) = \cos A$

9. $\sin\left(\frac{\pi}{2} - A\right) = \cos A$

10. $\cos\left(\frac{\pi}{2} - A\right) = \sin A$

11. $\sin 2A = 2 \sin A \cos A$

12. $\cos 2A = \cos^2 A - \sin^2 A$

13. $\cos 2A = 1 - 2 \sin^2 A$

14. $\cos 2A = 2 \cos^2 A - 1$

15. $\tan\left(\frac{A}{2}\right) = \pm \sqrt{\frac{1 - \cos A}{1 + \cos A}}$

16. $\sin\left(\frac{A}{2}\right) = \pm \sqrt{\frac{1 - \cos A}{2}}$

17. $\cos\left(\frac{A}{2}\right) = \pm \sqrt{\frac{1 + \cos A}{2}}$

18. $\tan\left(\frac{A}{2}\right) = \pm \sqrt{\frac{1 - \cos A}{1 + \cos A}}$