MHF4U: Advanced Functions, Grade 12, University Preparation

Trigonometric Formulas

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. $\tan(A+B)=\dfrac{\tan A+\tan B}{1-\tan A\tan B}$
6. $\tan(A-B)=\dfrac{\tan A-\tan B}{1+\tan A\tan B}$
7. $\sin(-A)=-\sin A$
8. $\cos(-A)=\cos A$
9. $\sin\left(\dfrac{\pi}{2}-A\right)=\cos A$
10. $\cos\left(\dfrac{\pi}{2}-A\right)=\sin A$
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. $\tan\left(\dfrac{A}{2}\right)=\pm\sqrt{\dfrac{1-\cos A}{1+\cos A}}$
16. $\sin\left(\dfrac{A}{2}\right)=\pm\sqrt{\dfrac{1-\cos A}{2}}$
17. $\cos\left(\dfrac{A}{2}\right)=\pm\sqrt{\dfrac{1+\cos A}{2}}$
18. $\tan\left(\dfrac{A}{2}\right)=\pm\sqrt{\dfrac{1-\cos A}{1+\cos A}}$