

Sum and Difference Identities: A Little Ditty

Sing to the
tune of ...



If You're Happy and You Know It

Traditional



If you're hap - py and you know it, clap your hands. If you're
hap - py and you know it, clap your hands. If you're
hap - py and you know it, then your face will sure - ly show it, If you're
hap - py and you know it clap your hands.

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

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

Oh ... the sine goes sine cosine, cosine sine ... (clap, clap).

Oh ... the sine goes sine cosine, cosine sine ... (clap, clap).

The sines (signs) stay the same,
but the cosines always change.

Oh ... the sine goes sine cosine, cosine sine ... (clap, clap)

$$\cos(A + B) = \cos A \cos B - \sin A \sin B$$
$$\cos(A - B) = \cos A \cos B + \sin A \sin B$$

Oh ... the cosine goes cosine cosine, sine sine ... (clap, clap).

Oh ... the cosine goes cosine cosine, sine sine ... (clap, clap).

The sines (signs) stay the same,
but the cosines always change.

Oh ... the cosine goes cosine cosine, sine sine ... (clap, clap)

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

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

Oh ... the tangent goes tan tan, one tan tan ... (clap, clap).

Oh ... the tangent goes tan tan, one tan tan ... (clap, clap).

The top sines stay the same,
but the bottoms always change.

Oh ... the tangent goes tan tan, one tan tan ... (clap, clap).