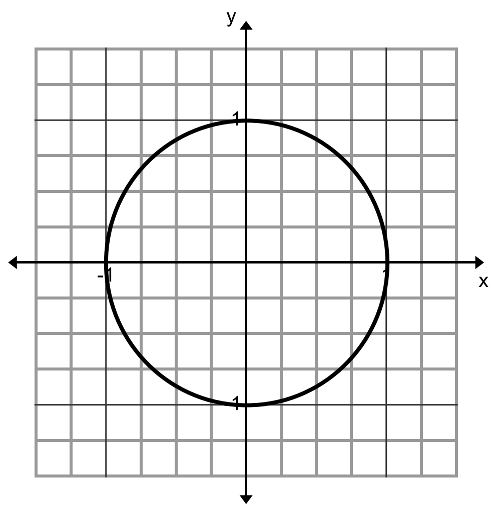
Compound Angles

Compound Angles Formula:

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

Show that the formula $\cos(x+y)=\cos x\cos y-\sin x\sin y$ is true for $x=\frac{\pi}{3}$ and $y=\frac{\pi}{6}$.

Proof of Compound Angles Formula:



Compound Angles Formulas:

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

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

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

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

1. Show that the formula $\sin(x+y)=\sin x\cos y+\cos x\sin y$ is true for $x=\frac{\pi}{2}$ and $y=\frac{3\pi}{4}$

2. Determine an exact value for the following expression:

$$\cos\frac{3\pi}{5}\cos\frac{\pi}{15}-\sin\frac{3\pi}{5}\sin\frac{\pi}{15}$$

3. Determine an exact value for the following:

a) $\sin\frac{\pi}{12}$

b) $\cos\frac{11\pi}{12}$

4. Evaluate $\tan(A-B)$ if $\sin A=\frac{3}{5}$ and $\cos B=-\frac{12}{13}$, where $\frac{\pi}{2}<A<\pi$ and $\pi<B<\frac{3\pi}{2}$.