

The **Cosine** of two angles being added together...

$$\cos (\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

The **Cosine** of the difference of two angles...

$$\cos (\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Sum

$$\cos (\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos (\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

express 75° using common angles

0° 30° 45° 60° 90° 120° 135° 150° 180°

$\cos 75^\circ$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

express 15° using common angles

0° 30° 45° 60° 90° 120° 135° 150° 180°

$$\cos 15^\circ$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

express $\frac{7\pi}{12}$ using common angles

$\frac{0\pi}{12}$ $\frac{2\pi}{12}$ $\frac{3\pi}{12}$ $\frac{4\pi}{12}$ $\frac{6\pi}{12}$ $\frac{8\pi}{12}$ $\frac{9\pi}{12}$ $\frac{10\pi}{12}$ $\frac{12\pi}{12}$

$$\cos \frac{7\pi}{12}$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

express $\frac{\pi}{12}$ using common angles

$$\frac{0\pi}{12} \quad \frac{2\pi}{12} \quad \frac{3\pi}{12} \quad \frac{4\pi}{12} \quad \frac{6\pi}{12} \quad \frac{8\pi}{12} \quad \frac{9\pi}{12} \quad \frac{10\pi}{12} \quad \frac{12\pi}{12}$$

$$\cos \frac{\pi}{12}$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

express 165° using common angles

$$0^\circ \quad 30^\circ \quad 45^\circ \quad 60^\circ \quad 90^\circ \quad 120^\circ \quad 135^\circ \quad 150^\circ \quad 180^\circ$$

$$\cos 165^\circ$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

express $\frac{5\pi}{12}$ using common angles

$$\frac{0\pi}{12} \quad \frac{2\pi}{12} \quad \frac{3\pi}{12} \quad \frac{4\pi}{12} \quad \frac{6\pi}{12} \quad \frac{8\pi}{12} \quad \frac{9\pi}{12} \quad \frac{10\pi}{12} \quad \frac{12\pi}{12}$$

$$\cos \frac{5\pi}{12}$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

$$\cos 10^\circ \cos 20^\circ - \sin 10^\circ \sin 20^\circ$$

$$\cos 105^\circ \cos 45^\circ + \sin 105^\circ \sin 45^\circ$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

Find the exact value of the following expressions:

$$\cos \frac{7\pi}{12} \cos \frac{\pi}{12} + \sin \frac{7\pi}{12} \sin \frac{\pi}{12}$$

$$\cos \frac{5\pi}{18} \cos \frac{\pi}{18} - \sin \frac{5\pi}{18} \sin \frac{\pi}{18}$$

Sum

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$$

Difference

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$