$$-\frac{87}{416}$$

If $\cos\alpha = \frac{4}{5}$ and $\cos\beta = \frac{12}{13}$ and $0 < \alpha < \beta < \frac{\pi}{2}$, find $\cos(\alpha - \beta)$.

$$\frac{63}{65}$$

Evaluate $\cos\frac{13\pi}{12}$. Give an exact value.

$$\frac{-\sqrt{2}-\sqrt{6}}{4}$$

Evaluate $\sin\frac{5\pi}{12}$. Give an exact value.

$$\frac{\sqrt{2}+\sqrt{6}}{4}$$

Evaluate $\frac{\tan 95^\circ + \tan 25^\circ}{1 - \tan 95^\circ \tan 25^\circ}$.

Give an exact value.

$-\sqrt{3}$

Evaluate $\tan 75^{o}$. Give an exact value.

$$2+\sqrt{3}$$

If $\sin\alpha=\frac{5}{13}$ and $\cos\beta=-\frac{3}{5}$, and $\frac{\pi}{2}<\alpha<\pi<\beta<\frac{3\pi}{2}$, find $\sin(\alpha+\beta)$.

$$\frac{33}{65}$$

Evaluate

$\cos 185^{o} \cos 40^{o} - \sin 185^{o} \sin 40^{o}$.

Give an exact value.

$$\frac{-\sqrt{2}}{2}$$

Evaluate

$\sin 80^o \cos 20^o - \cos 80^o \sin 20^o$.

Give an exact value.

$$\frac{\sqrt{3}}{2}$$

Simplify $\cos\left(\frac{\pi}{3}+x\right)+cos\left(\frac{\pi}{3}-x\right)$

$\cos x$

If $\tan\alpha = 2$ and $\tan\beta = 3$,

find $\tan(\alpha - \beta)$.

$$-\frac{1}{7}$$

Find $\tan\left(\frac{5\pi}{4}-\theta\right)$ if $\tan\theta=-\frac{1}{3}$.

2

Simplify $\sin\left(45^{\circ}-x\right)-\sin\left(45^{\circ}+x\right)$.

$$-\sqrt{2}\sin x$$

If $\frac{\pi}{2} < \alpha < \pi < \beta < \frac{3\pi}{2}$, $\cos\alpha = -\frac{15}{17}$, and $\tan\beta = \frac{7}{24}$, find $\tan(\alpha + \beta)$.