sin の加法定理

$$\sin(● \pm ▲) = \sin ● \cos ▲ \pm \cos ● \sin ▲$$

sin ではさむ　　$+, -$ はそのまま

cos の加法定理

$$\cos(● \pm ▲) = \cos ● \cos ▲ \mp \sin ● \sin ▲$$

$\cos\cos\sin\sin$　　$+, -$ は逆

$\sin 75^\circ$ の値を求めなさい

$\sin 75^\circ$

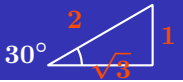
$\sin 75^\circ$ の値を求めなさい

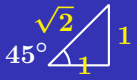
$$\sin 75^\circ = \qquad \sin(30^\circ + 45^\circ)$$

$\sin 75^\circ$ の値を求めなさい

$$\begin{aligned}\sin 75^\circ &= \sin(30^\circ + 45^\circ) \\ &= \sin 30^\circ \cos 45^\circ + \cos 30^\circ \sin 45^\circ\end{aligned}$$

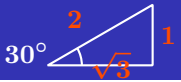
$\sin 75^\circ$ の値を求めなさい

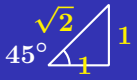




$$\begin{aligned}\sin 75^\circ &= \sin(30^\circ + 45^\circ) \\ &= \sin 30^\circ \cos 45^\circ + \cos 30^\circ \sin 45^\circ\end{aligned}$$

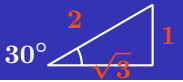
$\sin 75^\circ$ の値を求めなさい

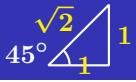




$$
\begin{aligned}
\sin 75^\circ &= \sin(30^\circ + 45^\circ) \\
&= \sin 30^\circ \cos 45^\circ + \cos 30^\circ \sin 45^\circ \\
&= \frac{1}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}}
\end{aligned}
$$

$\sin 75^\circ$ の値を求めなさい





$$
\begin{aligned}
\sin 75^\circ &= \sin(30^\circ + 45^\circ) \\
&= \sin 30^\circ \cos 45^\circ + \cos 30^\circ \sin 45^\circ \\
&= \frac{1}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} \\
&= \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}}
\end{aligned}
$$

$\sin 75^\circ$ の値を求めなさい

$$= \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}}$$

$$= \frac{1+\sqrt{3}}{2\sqrt{2}}$$

$\sin 75^\circ$ の値を求めなさい

$$= \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}}$$

$$= \frac{1+\sqrt{3}}{2\sqrt{2}}$$

$$= \frac{(1+\sqrt{3})\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}$$

有理化する

$\sin 75^\circ$ の値を求めなさい

$$= \frac{(1+\sqrt{3})\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}$$

$$= \frac{\sqrt{2}+\sqrt{6}}{4}$$ 答

$\cos 15^\circ$ の値を求めなさい

$\cos 15^\circ$ の値を求めなさい

$$\cos 15^\circ = \cos(45^\circ - 30^\circ)$$

$$\cos 15^\circ = \cos(60^\circ - 45^\circ)$$

どちらを計算してもよい

$\cos 15^\circ$ の値を求めなさい

$\cos 15^\circ$

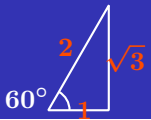
$\cos 15^\circ$ の値を求めなさい

$$\cos 15^\circ = \qquad \cos(60^\circ - 45^\circ)$$

$\cos 15^\circ$ の値を求めなさい

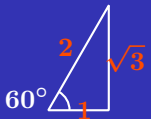
$$\begin{aligned}\cos 15^\circ &= \cos(60^\circ - 45^\circ) \\ &= \cos 60^\circ \cos 45^\circ + \sin 60^\circ \sin 45^\circ\end{aligned}$$

$\cos 15^\circ$ の値を求めなさい



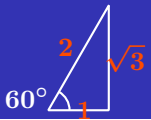
$$\begin{aligned}\cos 15^\circ &= \cos(60^\circ - 45^\circ) \\ &= \cos 60^\circ \cos 45^\circ + \sin 60^\circ \sin 45^\circ\end{aligned}$$

$\cos 15^\circ$ の値を求めなさい



$$
\begin{aligned}
\cos 15^\circ &= \cos(60^\circ - 45^\circ) \\
&= \cos 60^\circ \cos 45^\circ + \sin 60^\circ \sin 45^\circ \\
&= \frac{1}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}}
\end{aligned}
$$

$\cos 15^\circ$ の値を求めなさい



$$
\begin{aligned}
\cos 15^\circ &= \cos(60^\circ - 45^\circ) \\
&= \cos 60^\circ \cos 45^\circ + \sin 60^\circ \sin 45^\circ \\
&= \frac{1}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} \\
&= \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}}
\end{aligned}
$$

$\cos 15^\circ$ の値を求めなさい

$$= \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}}$$

$$= \frac{1+\sqrt{3}}{2\sqrt{2}}$$

$\cos 15^\circ$ の値を求めなさい

$$= \frac{1}{2\sqrt{2}} + \frac{\sqrt{3}}{2\sqrt{2}}$$

$$= \frac{1+\sqrt{3}}{2\sqrt{2}}$$

$$= \frac{(1+\sqrt{3})\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}$$

有理化する

$\cos 15^\circ$ の値を求めなさい

$$= \frac{(1+\sqrt{3})\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}$$

$$= \frac{\sqrt{2}+\sqrt{6}}{4}$$ 答

$\sin 105^\circ$ の値を求めなさい

$\sin 105^\circ$

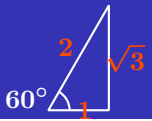
$\sin 105^\circ$ の値を求めなさい

$$\sin 105^\circ = \qquad \sin(60^\circ + 45^\circ)$$

$\sin 105^\circ$ の値を求めなさい

$$\begin{aligned}\sin 105^\circ &= \sin(60^\circ + 45^\circ) \\ &= \sin 60^\circ \cos 45^\circ + \cos 60^\circ \sin 45^\circ\end{aligned}$$

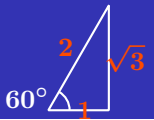
$\sin 105^\circ$ の値を求めなさい



$$\sin 105^\circ = \sin(60^\circ + 45^\circ)$$

$$= \sin 60^\circ \cos 45^\circ + \cos 60^\circ \sin 45^\circ$$

$\sin 105^\circ$ の値を求めなさい

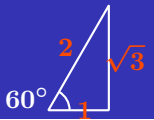


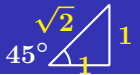
$$\sin 105^\circ = \sin(60^\circ + 45^\circ)$$

$$= \sin 60^\circ \cos 45^\circ + \cos 60^\circ \sin 45^\circ$$

$$= \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} + \frac{1}{2} \times \frac{1}{\sqrt{2}}$$

$\sin 105^\circ$ の値を求めなさい





$$
\begin{aligned}
\sin 105^\circ &= \sin(60^\circ + 45^\circ) \\
&= \sin 60^\circ \cos 45^\circ + \cos 60^\circ \sin 45^\circ \\
&= \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} + \frac{1}{2} \times \frac{1}{\sqrt{2}} \\
&= \frac{\sqrt{3}}{2\sqrt{2}} + \frac{1}{2\sqrt{2}}
\end{aligned}
$$

$\sin 105^\circ$ の値を求めなさい

$$= \frac{\sqrt{3}}{2\sqrt{2}} + \frac{1}{2\sqrt{2}}$$

$$= \frac{\sqrt{3}+1}{2\sqrt{2}}$$

$\sin 105^\circ$ の値を求めなさい

$$= \frac{\sqrt{3}}{2\sqrt{2}} + \frac{1}{2\sqrt{2}}$$

$$= \frac{\sqrt{3}+1}{2\sqrt{2}}$$

$$= \frac{(\sqrt{3}+1)\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}$$

有理化する

$\sin 105^\circ$ の値を求めなさい

$$= \frac{(\sqrt{3}+1)\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}$$

$$= \frac{\sqrt{6}+\sqrt{2}}{4}$$ 答