

氏名 \_\_\_\_\_

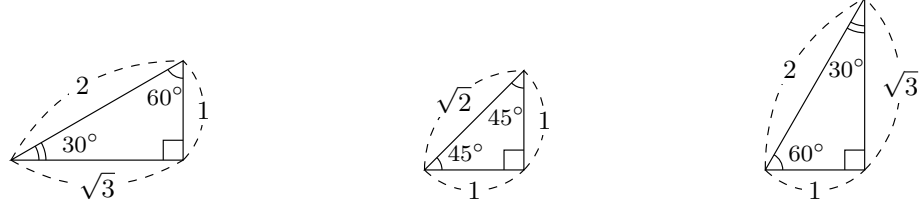
■ 三角比の拡張

•  $\sin A = \frac{\text{縦}}{\text{斜め}}$

•  $\cos A = \frac{\text{横}}{\text{斜め}}$

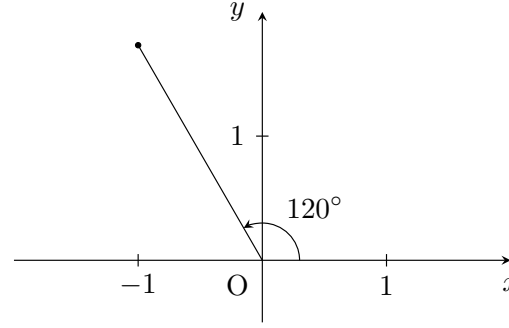
•  $\tan A = \frac{\text{縦}}{\text{横}}$

1 (復習) 次の直角三角形を用いて、30°, 45°, 60° の sin, cos, tan の値を求めなさい。



$\sin 30^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>	$\sin 45^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>	$\sin 60^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>
$\cos 30^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>	$\cos 45^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>	$\cos 60^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>
$\tan 30^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>	$\tan 45^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>	$\tan 60^\circ =$ <input style="width: 40px; height: 30px;" type="text"/>

■ 120° の三角比

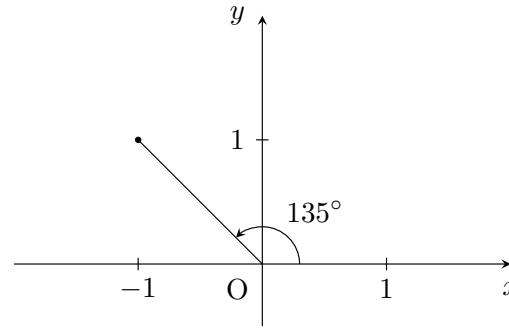


$\sin 120^\circ =$

$\cos 120^\circ =$

$\tan 120^\circ =$

■ 135° の三角比

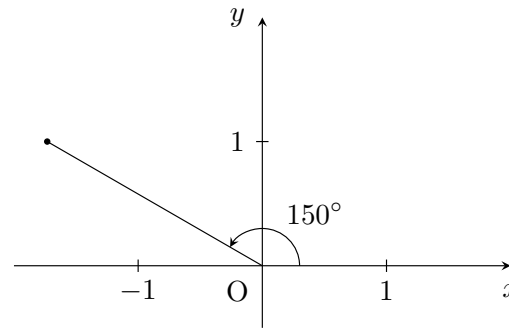


$\sin 135^\circ =$

$\cos 135^\circ =$

$\tan 135^\circ =$

■ 150° の三角比



$\sin 150^\circ =$

$\cos 150^\circ =$

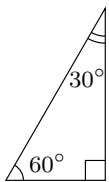
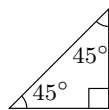
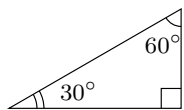
$\tan 150^\circ =$

150° の三角比:  $\sin 150^\circ = \frac{1}{2}, \cos 150^\circ = -\frac{\sqrt{3}}{2}, \tan 150^\circ = -\frac{1}{\sqrt{3}}$   
 135° の三角比:  $\sin 135^\circ = \frac{\sqrt{2}}{2}, \cos 135^\circ = -\frac{\sqrt{2}}{2}, \tan 135^\circ = -1$   
 120° の三角比:  $\sin 120^\circ = \frac{\sqrt{3}}{2}, \cos 120^\circ = -\frac{1}{2}, \tan 120^\circ = -\sqrt{3}$   
 復習:  $\sin 30^\circ = \frac{1}{2}, \cos 30^\circ = \frac{\sqrt{3}}{2}, \tan 30^\circ = \frac{1}{\sqrt{3}}$   
 $\sin 45^\circ = \frac{\sqrt{2}}{2}, \cos 45^\circ = \frac{\sqrt{2}}{2}, \tan 45^\circ = 1$   
 $\sin 60^\circ = \frac{\sqrt{3}}{2}, \cos 60^\circ = \frac{1}{2}, \tan 60^\circ = \sqrt{3}$

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■ 三角比の拡張 (90°~180° の三角比)

(復習) 次の直角三角形を用いて, 30°, 45°, 60°, 120°, 135°, 150° の sin, cos, tan の値を求めなさい。



sin 30° =

sin 45° =

sin 60° =

cos 30° =

cos 45° =

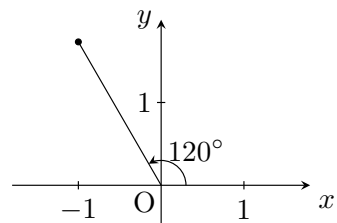
cos 60° =

tan 30° =

tan 45° =

tan 60° =

■ 120° の三角比

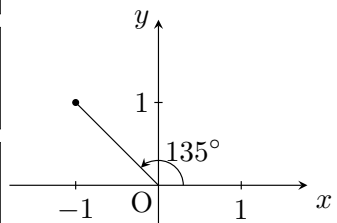


sin 120° =

cos 120° =

tan 120° =

■ 135° の三角比

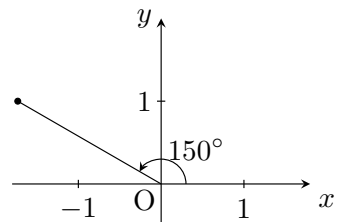


sin 135° =

cos 135° =

tan 135° =

■ 150° の三角比



sin 150° =

cos 150° =

tan 150° =

$\frac{\sqrt{3}}{2} = \sin 150^\circ; \frac{1}{2} = \cos 150^\circ; -\frac{\sqrt{3}}{3} = \tan 150^\circ$

$-\frac{\sqrt{3}}{2} = \sin 120^\circ; \frac{1}{2} = \cos 120^\circ; \sqrt{3} = \tan 120^\circ$   
 $-\frac{\sqrt{3}}{2} = \sin 135^\circ; -\frac{1}{\sqrt{2}} = \cos 135^\circ; 1 = \tan 135^\circ$   
 $-\frac{1}{2} = \sin 150^\circ; -\frac{\sqrt{3}}{2} = \cos 150^\circ; -1 = \tan 150^\circ$   
 $\frac{1}{2} = \sin 30^\circ; \frac{\sqrt{3}}{2} = \cos 30^\circ; \frac{\sqrt{3}}{3} = \tan 30^\circ$   
 $\frac{\sqrt{2}}{2} = \sin 45^\circ; \frac{\sqrt{2}}{2} = \cos 45^\circ; 1 = \tan 45^\circ$   
 $\frac{\sqrt{3}}{2} = \sin 60^\circ; \frac{1}{2} = \cos 60^\circ; \sqrt{3} = \tan 60^\circ$

■ 三角形の面積

今日は 120°, 135°, 150° を使って, 以前学んだ三角形の面積を計算しよう。

(三角形の面積) =  $\frac{1}{2} \times (\text{辺の長さ}) \times (\text{辺の長さ}) \times \sin(\text{間の角度})$

I 次の三角形の面積を求めなさい。

