三角関数の性質

$$\sin(\theta+2\pi)=\sin\theta \qquad \cos(\theta+2\pi)=\cos\theta \qquad \tan(\theta+2\pi)=\tan\theta$$

$$\sin(-\theta)=-\sin\theta \qquad \cos(-\theta)=\cos\theta \qquad \tan(-\theta)=-\tan\theta$$

$$\sin(\theta+\pi)=-\sin\theta \qquad \cos(\theta+\pi)=-\cos\theta \qquad \tan(\theta+\pi)=\tan\theta$$

$$\sin(\pi-\theta)=\sin\theta \qquad \cos(\pi-\theta)=-\cos\theta \qquad \tan(\pi-\theta)=-\tan\theta$$

$$\sin\left(\theta+\frac{\pi}{2}\right)=\cos\theta \qquad \cos\left(\theta+\frac{\pi}{2}\right)=-\sin\theta \qquad \tan\left(\theta+\frac{\pi}{2}\right)=-\frac{1}{\tan\theta}$$

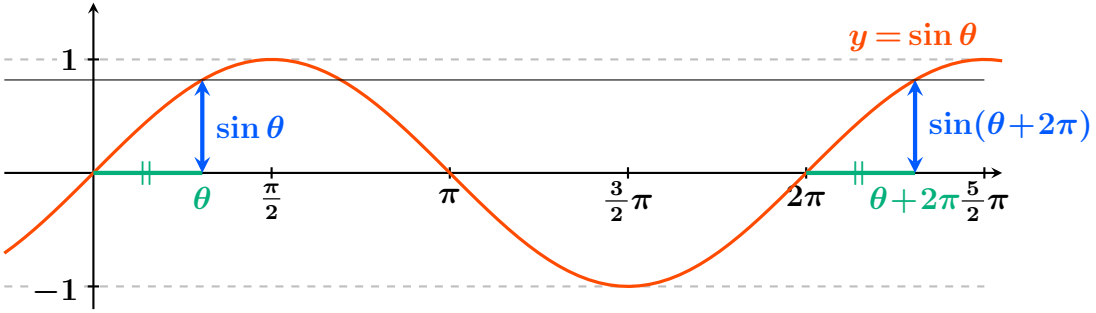
$$\sin\left(\frac{\pi}{2}-\theta\right)=\cos\theta \qquad \cos\left(\frac{\pi}{2}-\theta\right)=\sin\theta \qquad \tan\left(\frac{\pi}{2}-\theta\right)=\frac{1}{\tan\theta}$$

暗記する必要はないと思うよ…

そこまで重要な式だとは思わない。

しかし、これらの式が必要になったときはグラフの概形と対称性を使って式を導き出せるようになっておくことは必要だと思う。

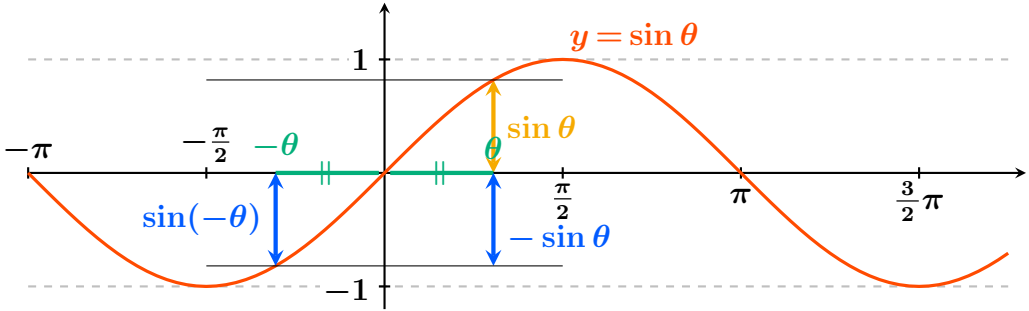
$\sin(\theta+2\pi)=\sin\theta$



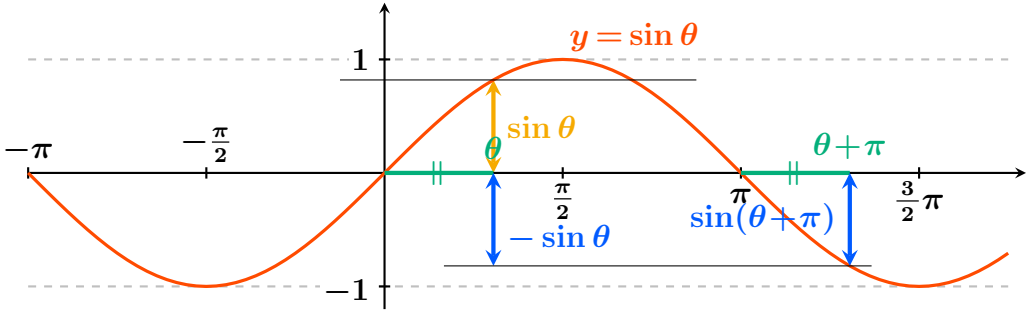
周期2πなので $\sin(\theta+4\pi)=\sin\theta$, $\sin(\theta+6\pi)=\sin\theta$ なども成り立つから

まとめて　$\sin(\theta+2n\pi)=\sin\theta$

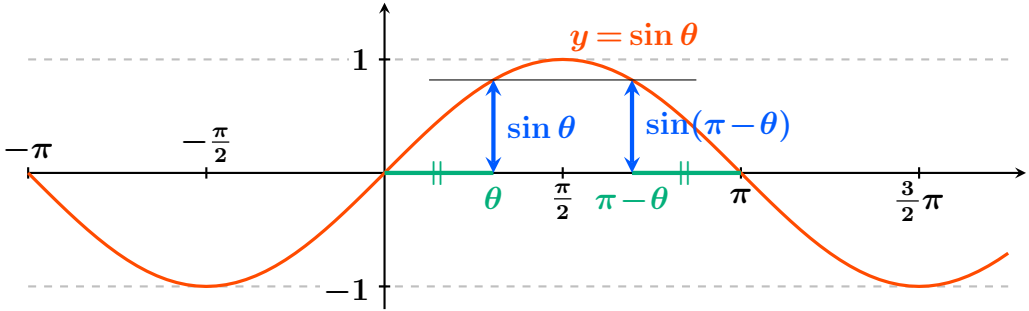
$\sin(-\theta) = -\sin\theta$



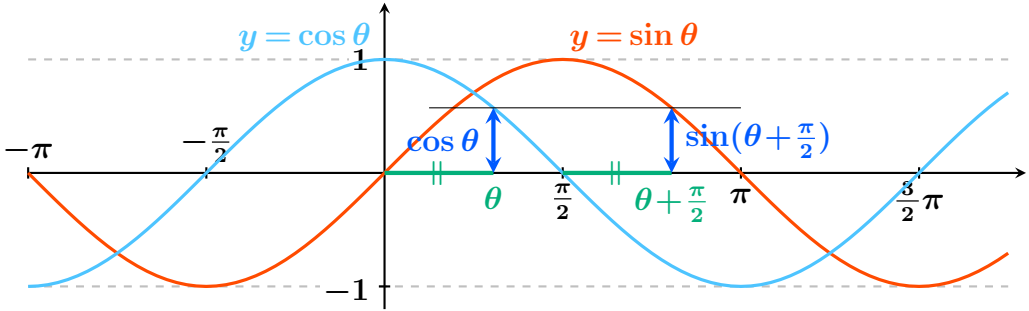
$\sin(\theta+\pi)=-\sin\theta$



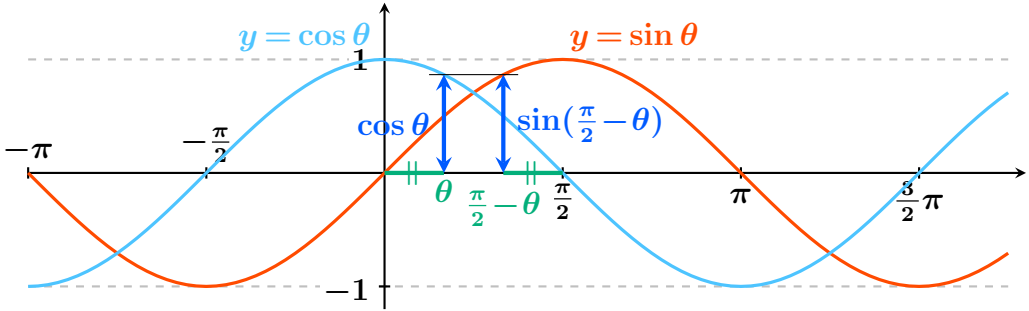
$\sin(\pi-\theta)=\sin\theta$



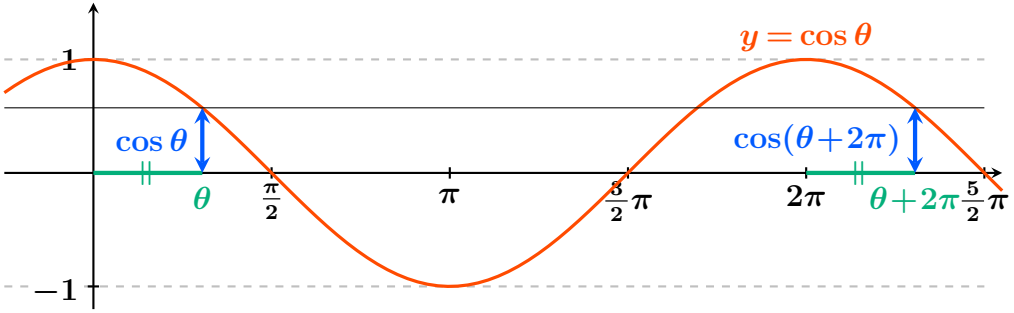
$\sin\left(\theta+\frac{\pi}{2}\right)=\cos\theta$



$\sin\left(\frac{\pi}{2}-\theta\right)=\cos\theta$



$\cos(\theta+2\pi)=\cos\theta$



周期2πなので $\cos(\theta+4\pi)=\cos\theta$，$\cos(\theta+6\pi)=\cos\theta$ なども成り立つから

まとめて　$\cos(\theta+2n\pi)=\cos\theta$

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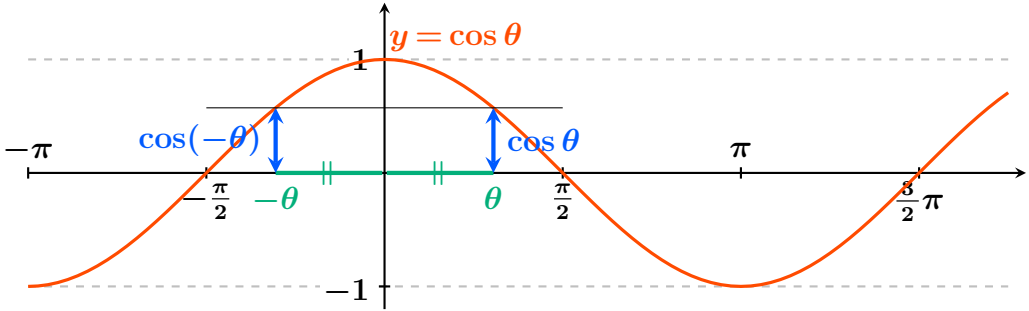
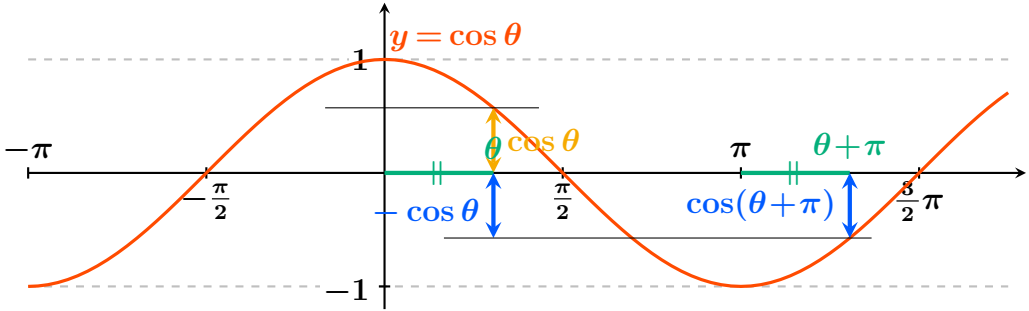


$\cos(\theta+\pi) = -\cos\theta$



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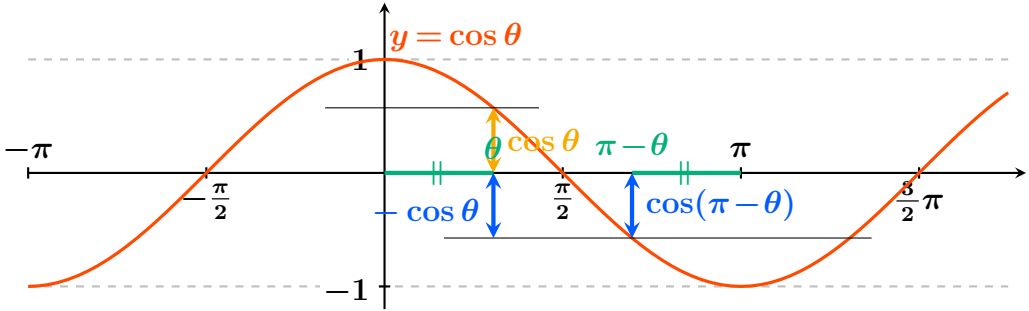
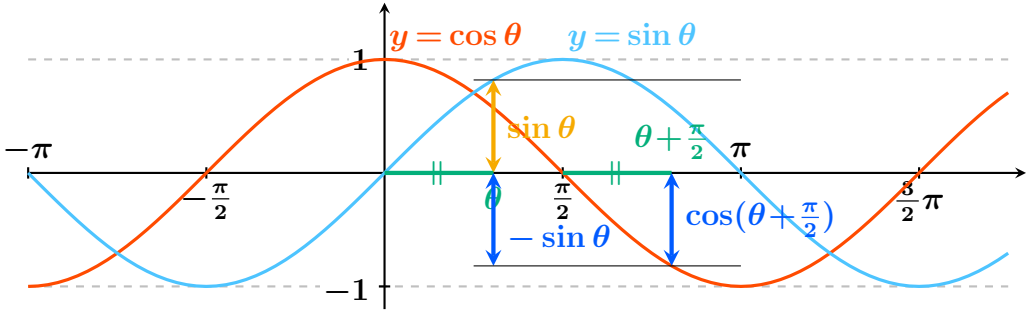


$\cos\left(\theta+\frac{\pi}{2}\right)=-\sin\theta$



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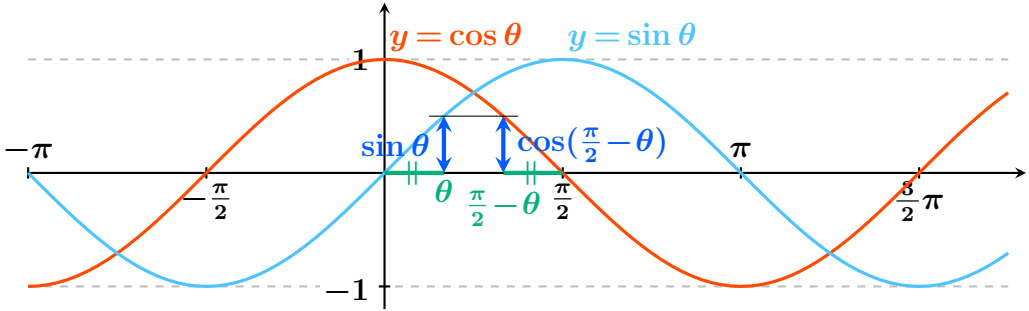
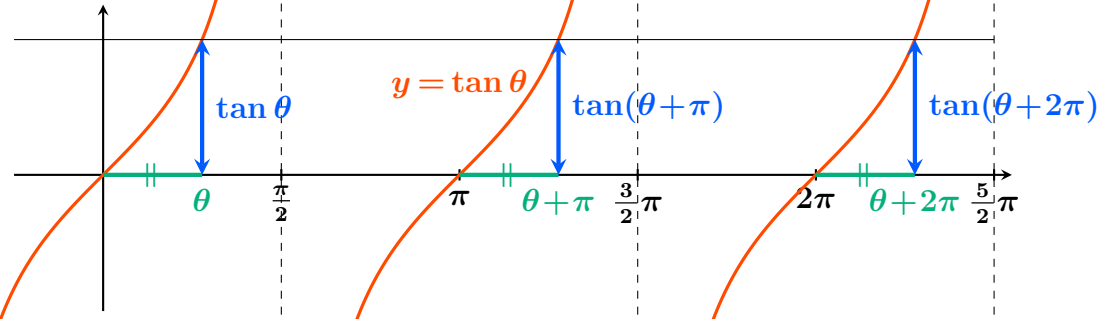


$\tan(\theta+2\pi)=\tan\theta$

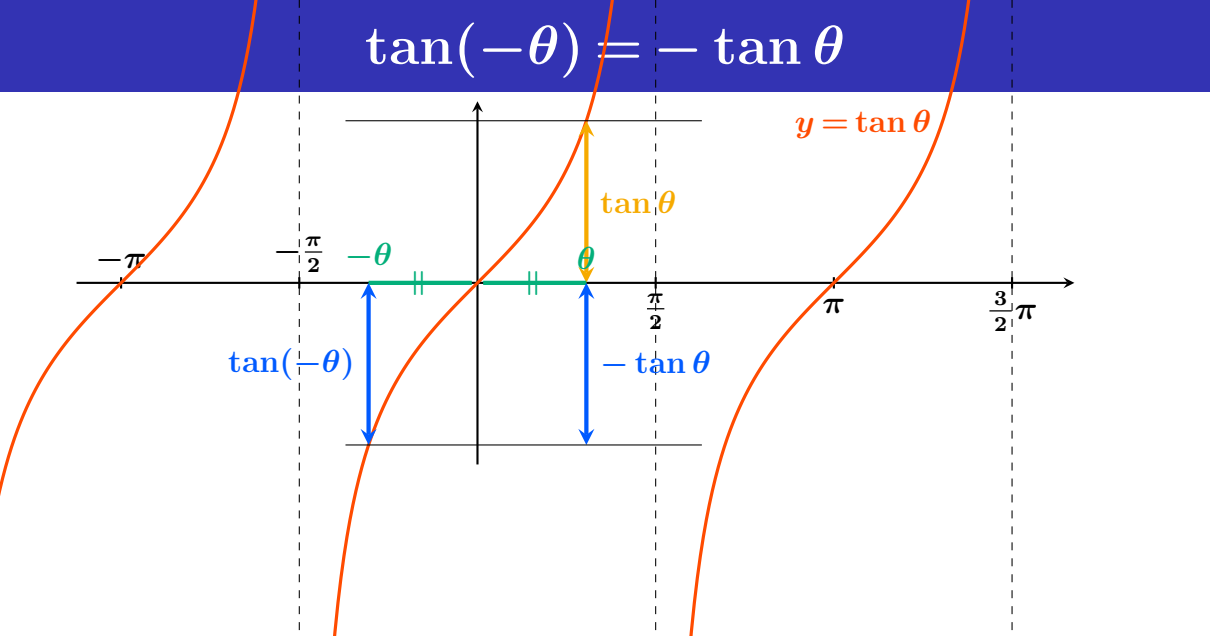


周期πなので $\tan(\theta+3\pi)=\tan\theta$, $\tan(\theta+4\pi)=\tan\theta$ なども成り立つから

まとめて　$\tan(\theta+2n\pi)=\tan\theta$

$\tan(\theta+n\pi)=\tan\theta$

$\tan(-\theta) = -\tan\theta$



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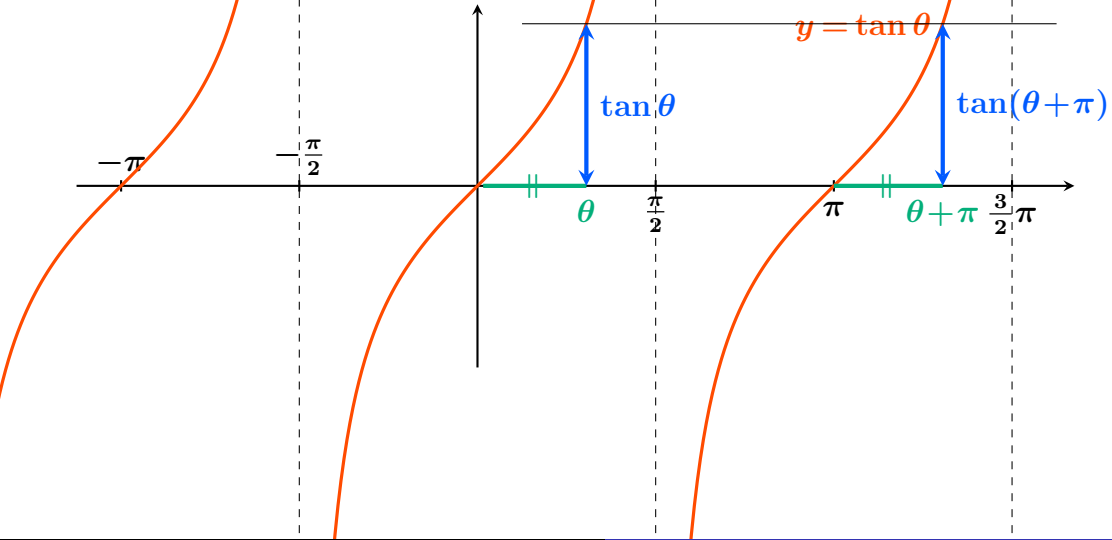

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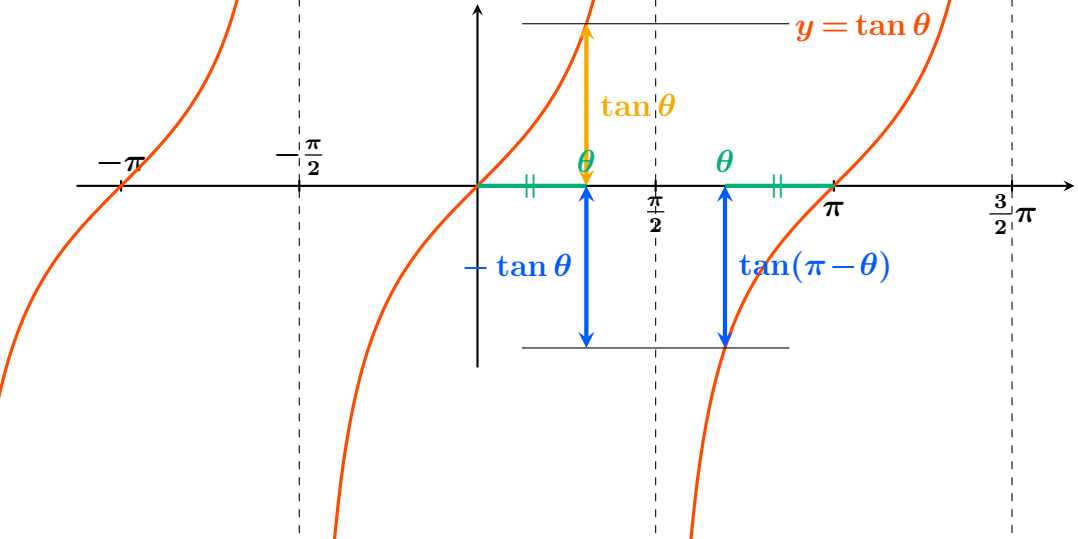
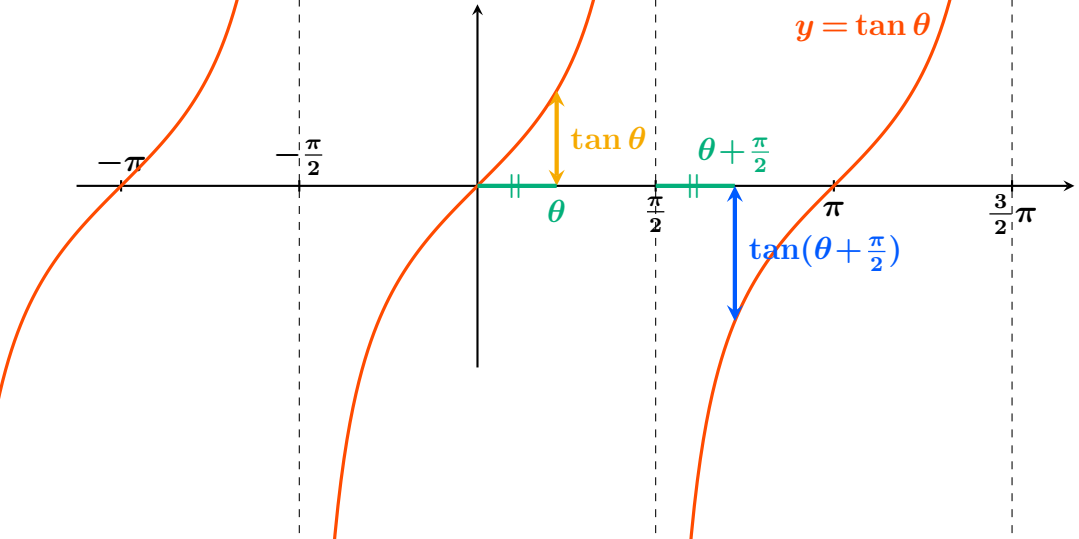
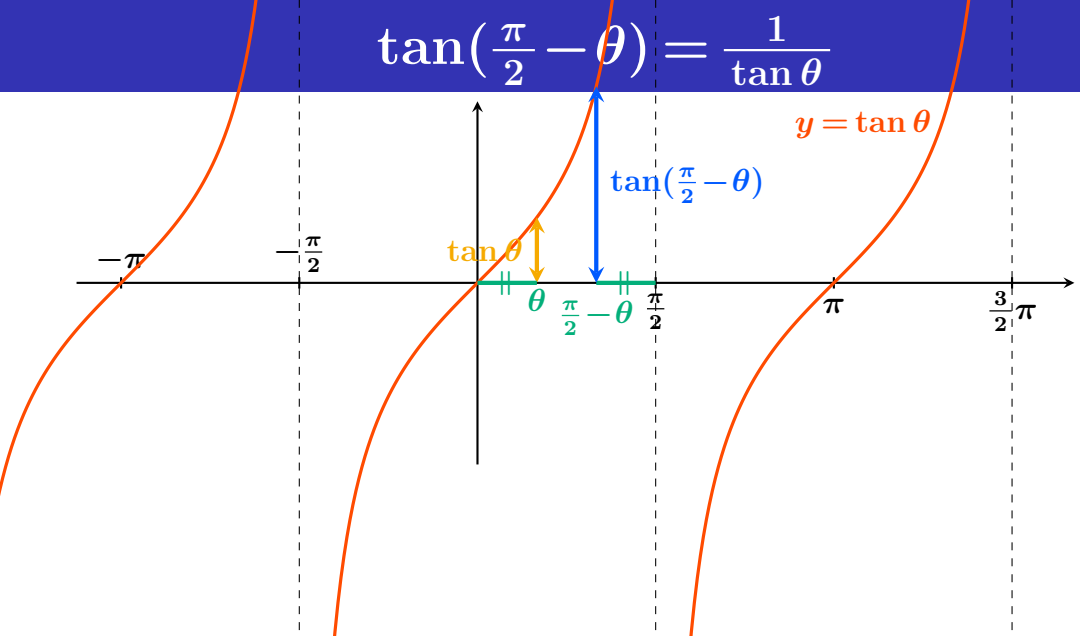


$\tan\left(\theta+\frac{\pi}{2}\right)=-\frac{1}{\tan\theta}$



$\tan\left(\frac{\pi}{2}-\theta\right)=\frac{1}{\tan\theta}$