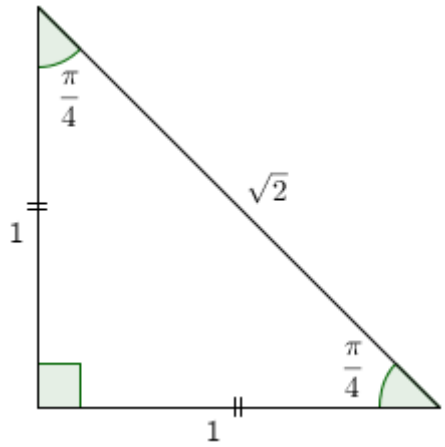
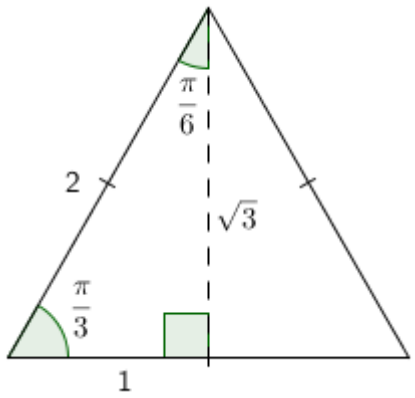
Trigonometry General Results

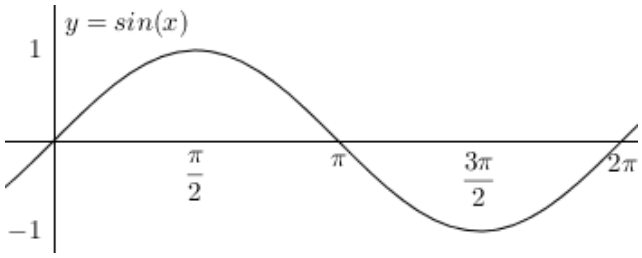
Isosceles right-angled triangle:

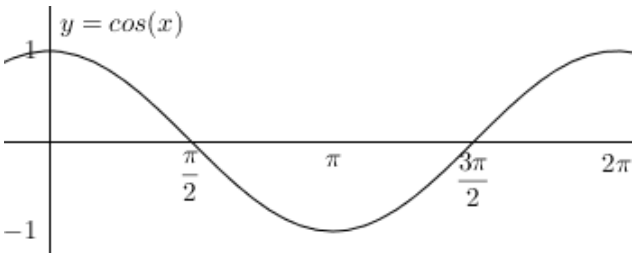


$\sin\frac{\pi}{4} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \approx 0.707$	$\sin\frac{\pi}{6} = \frac{1}{2} = 0.5$	$\sin\frac{\pi}{3} = \frac{\sqrt{3}}{2} \approx 0.866$
$\cos\frac{\pi}{4} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \approx 0.707$	$\cos\frac{\pi}{6} = \frac{\sqrt{3}}{2} \approx 0.866$	$\cos\frac{\pi}{3} = \frac{1}{2} = 0.5$
$\tan\frac{\pi}{4} = 1$	$\tan\frac{\pi}{6} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3} \approx 0.577$	$\tan\frac{\pi}{3} = \sqrt{3} \approx 1.732$

Bisected equilateral triangle:

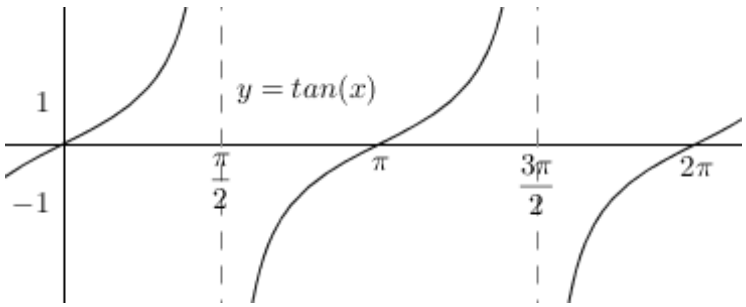






$$\sin\theta = \cos\left(\frac{\pi}{2} - \theta\right)$$

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



$$\tan\theta = \frac{\sin\theta}{\cos\theta}$$

$$\sin^2\theta + \cos^2\theta = 1$$

$\sin\theta$ and $\cos\theta$ both have period 2π	
$\cos\theta = \cos(\theta + 2\pi)$ $\cos\theta = \cos(\theta + 4\pi)$ … $\boldsymbol{\cos\theta = \cos(\theta + 2n\pi)}$	$\sin\theta = \sin(\theta + 2\pi)$ $\sin\theta = \sin(\theta + 4\pi)$ … $\boldsymbol{\sin\theta = \sin(\theta + 2n\pi)}$
$\cos\theta$ has symmetry about: 0, π, etc…	**$\sin\theta$ has symmetry about: $\frac{\pi}{2}$, $\frac{3\pi}{2}$, etc…**
$\cos\theta = \cos(-\theta)$ $\cos\theta = \cos(\pi - \theta)$ … $\boldsymbol{\cos\theta = \cos(n\pi - \theta)}$	$\sin\theta = \sin\left(\frac{\pi}{2} - \theta\right)$ $\sin\theta = \sin\left(\frac{3\pi}{2} - \theta\right)$ … $\boldsymbol{\sin\theta = \sin\left(\frac{\pi}{2} + n\pi - \theta\right)}$
$\cos\theta$ has rotational symmetry about $\frac{\pi}{2}$, $\frac{3\pi}{2}$, etc…	**$\sin\theta$ has rotational symmetry about 0, π, etc…**
$\cos\theta = -\cos\left(\frac{\pi}{2} - \theta\right)$ $\cos\theta = -\cos\left(\frac{3\pi}{2} - \theta\right)$ … $\boldsymbol{\cos\theta = -\cos\left(\frac{\pi}{2} + n\pi - \theta\right)}$	$\sin\theta = -\sin(-\theta)$ $\sin\theta = -\sin(\pi - \theta)$ … $\boldsymbol{\sin\theta = -\sin(n\pi - \theta)}$

$\tan\theta$ has period π	**$\tan\theta$ has rotational symmetry about 0, π, etc…**
$\tan\theta = \tan(\theta + \pi)$ $\tan\theta = \tan(\theta + 2\pi)$ … $\boldsymbol{\tan\theta = \tan(\theta + n\pi)}$	$\tan\theta = -\tan(-\theta)$ $\tan\theta = -\tan(\pi - \theta)$ … $\boldsymbol{\tan\theta = -\tan(n\pi - \theta)}$