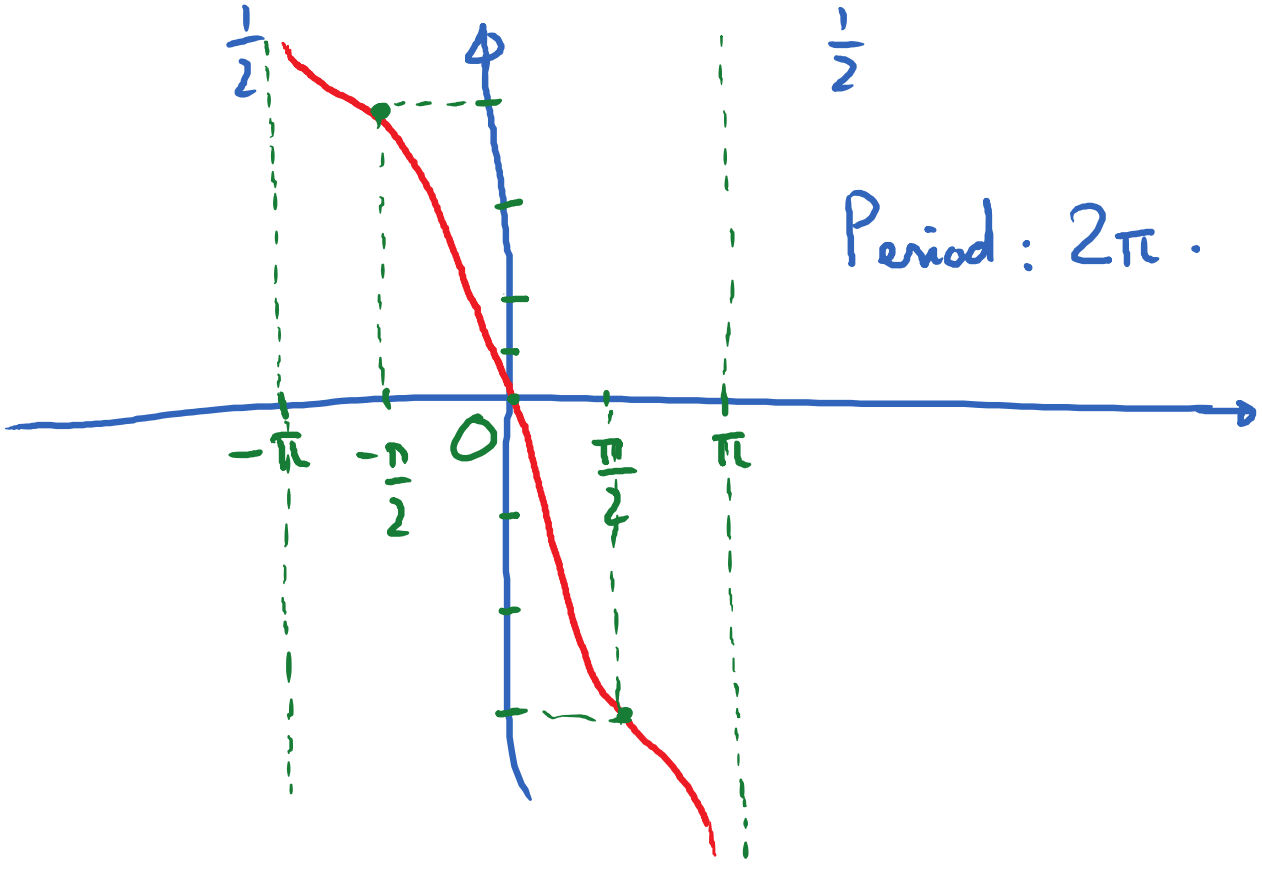
Ex. Graph: $y = -3\tan\left(\frac{1}{2}x\right)$ over 1 period.

Find the period and key points and asymptotes.

$y = \tan(x)$ $\quad -\frac{\pi}{2}$, $\frac{\pi}{2}$

$\frac{1}{2}x = \frac{\pi}{2}$; $\frac{1}{2}x = -\frac{\pi}{2}$

$x = \frac{\frac{\pi}{2}}{\frac{1}{2}} = \pi$ $\qquad x = \frac{-\frac{\pi}{2}}{\frac{1}{2}} = -\pi.$



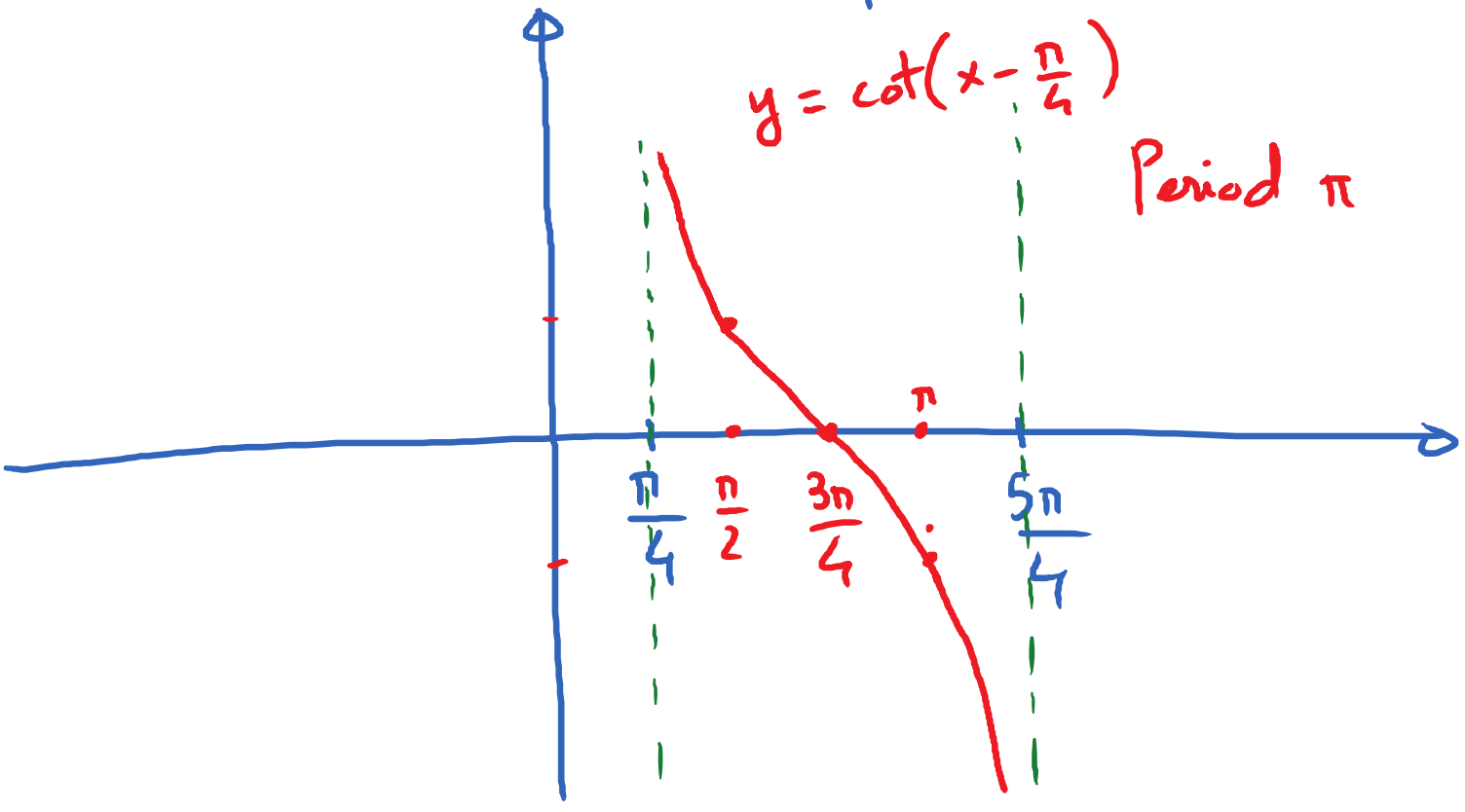
Period: 2π.

x	$y = -3\tan\left(\frac{1}{2}x\right)$
$-\pi$	undefined
$-\frac{\pi}{2}$	3
0	0
$\frac{\pi}{2}$	-3
π	undefined

E.g. $y = \cot\left(x - \frac{\pi}{4}\right)$ over 1 period

x	$y = \cot(x)$
0	undefined
$\frac{\pi}{4}$	1
$\frac{\pi}{2}$	0
$\frac{3\pi}{4}$	-1
π	undefined

x	$y = \cot\left(x - \frac{\pi}{4}\right)$
$\frac{\pi}{4}$	undefined
$\frac{\pi}{2}$	1
$\frac{3\pi}{4}$	0
π	-1
$\frac{5\pi}{4}$	undefined



Ex. Graph $y = -2 - \tan(x + \pi)$ over one period.

x	$y = \tan x$
$-\frac{\pi}{2}$	undefined
$-\frac{\pi}{4}$	-1
0	0
$\frac{\pi}{4}$	1
$\frac{\pi}{2}$	undefined

x	$y = -2 - \tan(x + \pi)$
$-\frac{3\pi}{2}$	undefined
$-\frac{5\pi}{4}$	-1
$-\pi$	-2
$-\frac{3\pi}{4}$	-3
$-\frac{\pi}{2}$	undefined

Eg. $y = -1 + \tan\left(2x - \frac{\pi}{2}\right)$

$$y = -1 + \tan\left[2\left(x - \frac{\pi}{4}\right)\right]$$