Review: Evaluate the following trigonometric expressions.

$\tan\frac{5\pi}{2} = \frac{1}{0} = \boxed{\text{undefined}}$ (0, 1)

$\sec\left(\frac{3\pi}{2}\right) = \frac{1}{0} = \boxed{\text{undefined}}$ (0, -1)

$\sin\left(\frac{-5\pi}{6}\right) = \boxed{-\frac{1}{2}}$ $-\sqrt{3}$, -1, $30°$, 2

$\csc\left(\frac{4\pi}{3}\right) = \boxed{-\frac{2}{\sqrt{3}}}$ -1, $-\sqrt{3}$, $60°$, 2

$\cos\left(-\frac{5\pi}{4}\right) = \boxed{\frac{-1}{\sqrt{2}}}$ 1, $\sqrt{2}$, -1

$\cot\left(\frac{-9\pi}{4}\right) = \boxed{-1}$ 1, -1

$y = -3\cot\frac{\pi}{2}x$

"amp" = 3

period: $\frac{\pi}{\pi/2} = \frac{\pi}{1}\cdot\frac{2}{\pi} = 2$

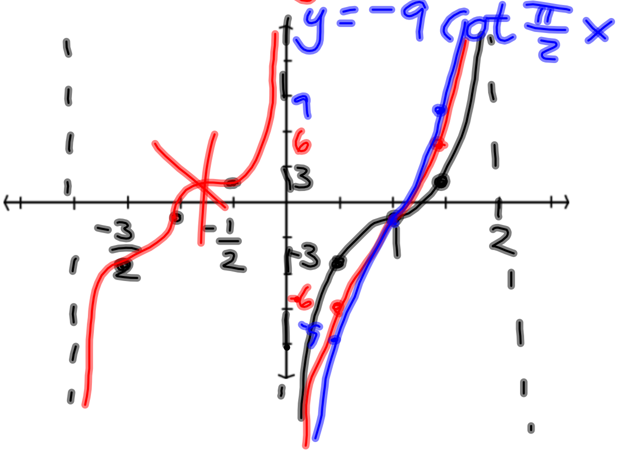
$y = af(bx)$

amplitude or "amplitude" of relevant reference points $= |a|$

period $= \frac{\pi \text{ (cot, tan)} \text{ or } 2\pi \text{ (sin, cos, sec, csc)}}{|b|}$

$y = -6\cot\frac{\pi}{2}x$

$y = -9\cot\frac{\pi}{2}x$

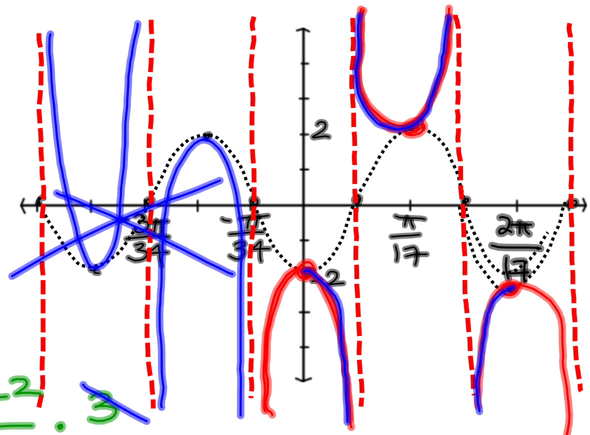


cot has asymptotes @ 0 & the period

$y = -2\sec 17x$

amp: $|-2| = 2$

per: $\frac{2\pi}{17}$



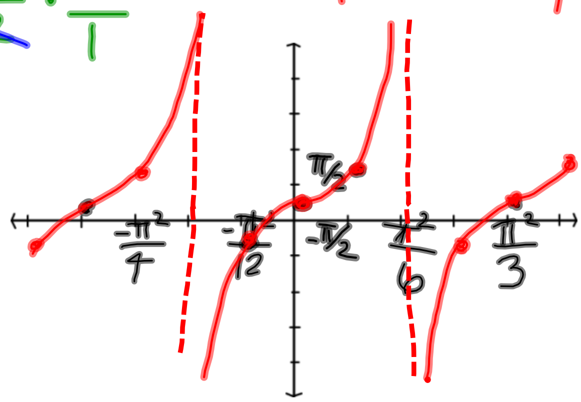
$y = \frac{\pi}{2}\tan\left(\frac{3}{\pi}x\right)$

$4\,\frac{\pi^2}{12} \cdot \frac{3}{1}$

amp: $\pi/2$

per: $\frac{\pi}{3/\pi} = \frac{\pi}{1} \cdot \frac{\pi}{3} = \frac{\pi^2}{3}$

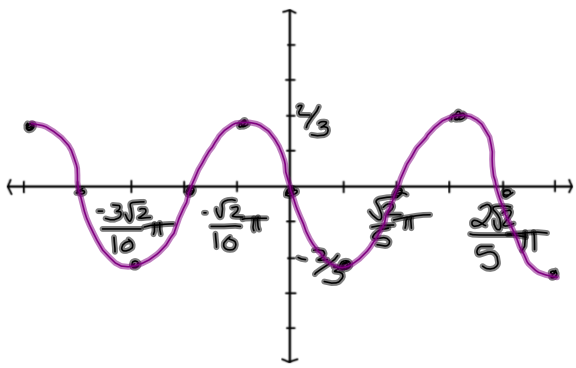
*tangent has V.A's @ $\pm$ half the period



$y = -\frac{2}{3}\sin\left(\frac{5}{\sqrt{2}}x\right)$

amp: $2/3$

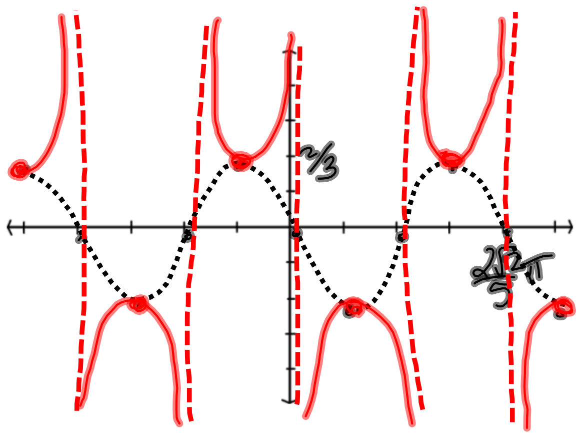
per: $\frac{2\pi}{5/\sqrt{2}} = \frac{2\pi}{1} \cdot \frac{\sqrt{2}}{5} = \frac{2\sqrt{2}}{5}\pi$



$y = -\frac{2}{3}\csc\left(\frac{5}{\sqrt{2}}x\right)$

amp: $2/3$

per: $\frac{2\sqrt{2}}{5}\pi$



$y = af(bx)$ ✓ scaling

ultimate goal: $y = a[f(bx+c)] + d$

$y = f(x+c) + d$ shifting

outside - vertically as we would expect

inside - horizontally, opposite

d = vertical shift

$d > 0$ up

$d < 0$ down

c = horizontal shift

$c > 0$ left

$c < 0$ right

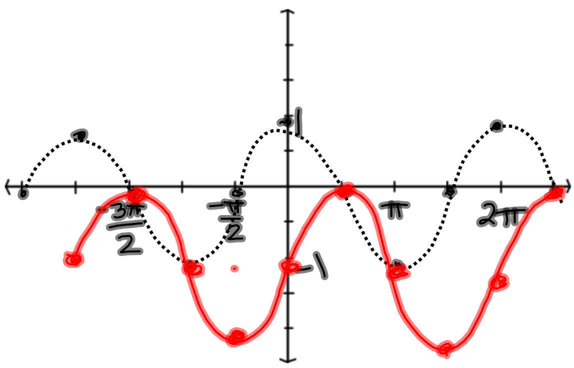
$y = \cos(x - \frac{\pi}{2}) - 1$

amp: 1

per: 2π

right $\frac{\pi}{2}$ (1 tick)

down 1 (2 ticks)



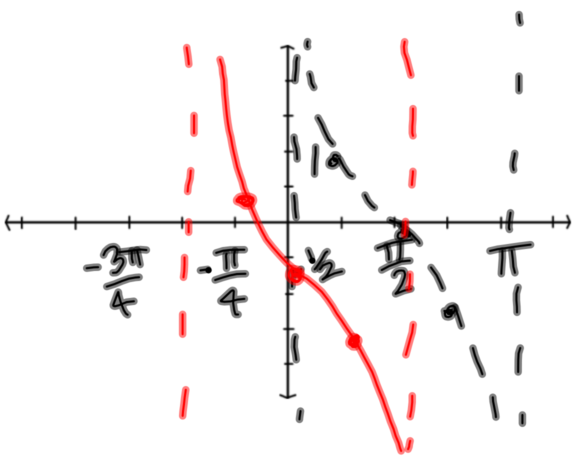
$y = \cot(x + \frac{\pi}{2}) - \frac{1}{2}$

amp: 1

per: π

left $\pi/2$

down $1/2$



→ #36

HW

25-36 worksheets