

See 4.5 p. 365-6 2, 5, 10, 20-22, 24

horizontal
sketch of $\frac{1}{2}$

2. $y_1 = 5 \tan x$ (red)

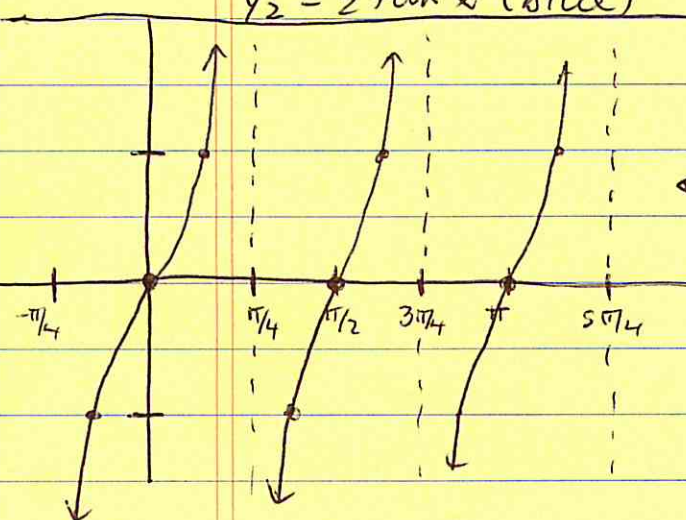
$y_2 = \frac{1}{2} \tan x$ (blue)

5. $y = \tan 2x$

$P = \frac{\pi}{2}$ $b = 2$

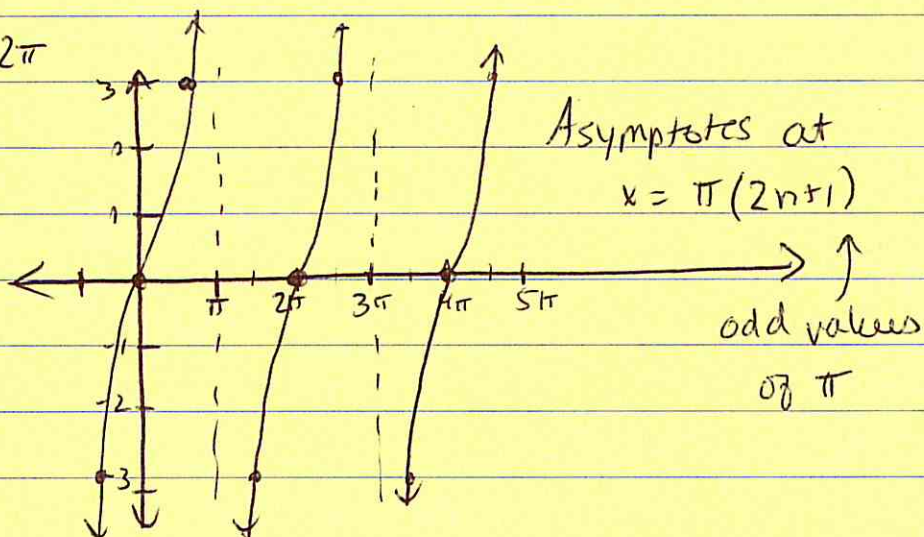
x	y	$\frac{1}{2}x$	y
0	0	0	0
$\frac{\pi}{2}$	undef	$\frac{\pi}{4}$	undef
π	0	$\frac{\pi}{2}$	0
$\frac{3\pi}{2}$	undef	$\frac{3\pi}{4}$	undef
2π	0	π	0
$\frac{\pi}{4}$	1	$\frac{\pi}{8}$	1

Asymptotes
at $x = \frac{\pi}{4} + \frac{n\pi}{2}$



10. $y = 3 \tan \frac{x}{2}$ $b = \frac{1}{2}$ $P = \frac{\pi}{\frac{1}{2}} = 2\pi$

x	y	$2x$	$3y$
0	0	0	0
$\frac{\pi}{2}$	undef	π	undef
π	0	2π	0
$\frac{3\pi}{2}$	undef	3π	undef
2π	0	4π	0
$\frac{\pi}{4}$	1	$\frac{\pi}{2}$	3



Asymptotes at
 $x = \pi(2n+1)$
odd values
of π

20. $f(x) = \tan \frac{x}{2}$ $P = 2\pi$

x	y	$2x$	y
0	0	0	0
$\frac{\pi}{2}$	undef	π	undef
π	0	2π	0
$\frac{3\pi}{2}$	undef	3π	undef
2π	0	4π	0
$\frac{\pi}{4}$	1	$\frac{\pi}{2}$	1

D: $x \neq (2n+1)\pi$

R: $(-\infty, \infty)$

continuous

increasing

symmetry w/ origin (odd)
fcn

unbounded

no max/min/extrema

no end behavior

21. $y = 3 \tan x$

22. $y = -\tan x$

24. $y = 2 \tan x$