11.2b #10-16 even, 21, 22, 31-33

10. $p(x) = \tan \frac{3}{2}x$

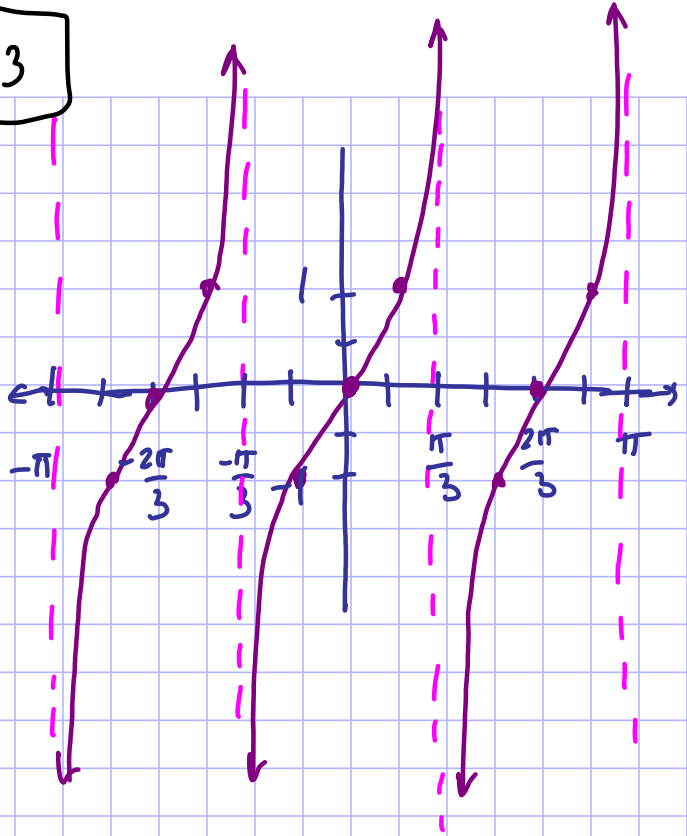
$\text{period} = \frac{\pi}{|b|} = \frac{\pi}{|3/2|} = \frac{2\pi}{3}$

x-int: $\frac{-2\pi}{3}, 0, \frac{2\pi}{3} = \frac{2n\pi}{3}$

asymptotes: $\frac{\pi}{2|b|} + \frac{n\pi}{|b|}$

$= \frac{\pi}{2|3/2|} + \frac{n\pi}{|3/2|}$

$= \frac{\pi}{3} + \frac{2n\pi}{3}$

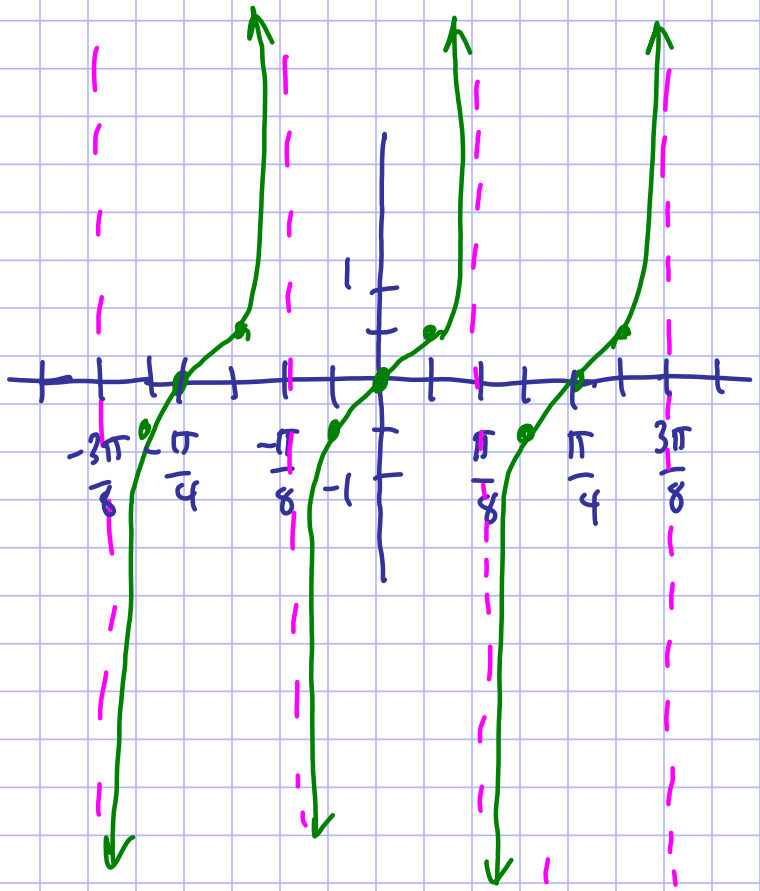


12. $h(x) = \frac{1}{2}\tan 4x$

$\text{period} = \frac{\pi}{|b|} = \frac{\pi}{4}$

asymp: $\frac{\pi}{2|b|} + \frac{n\pi}{|b|} = \frac{\pi}{8} + \frac{n\pi}{4}$

x-int: $-\frac{\pi}{4}, 0, \frac{\pi}{4} = \frac{n\pi}{4}$



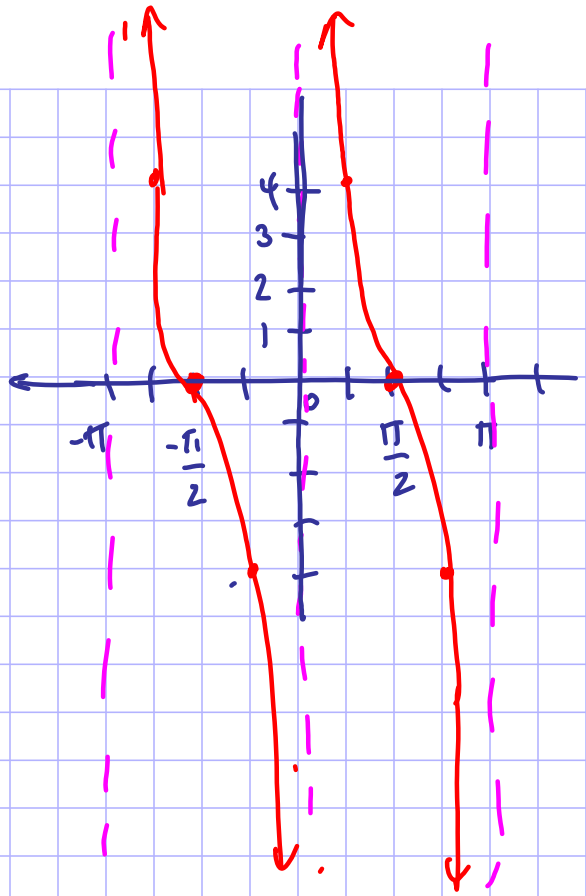
14. $h(x) = 4\cot x$

$per = \frac{\pi}{|b|} = \frac{\pi}{1} = \pi$

asymptotes: $\frac{\pi}{|b|} + \frac{n\pi}{|b|}$

$= \pi + n\pi$

x-int: $-\frac{\pi}{2}, \frac{\pi}{2} = -\frac{\pi}{2} + n\pi$



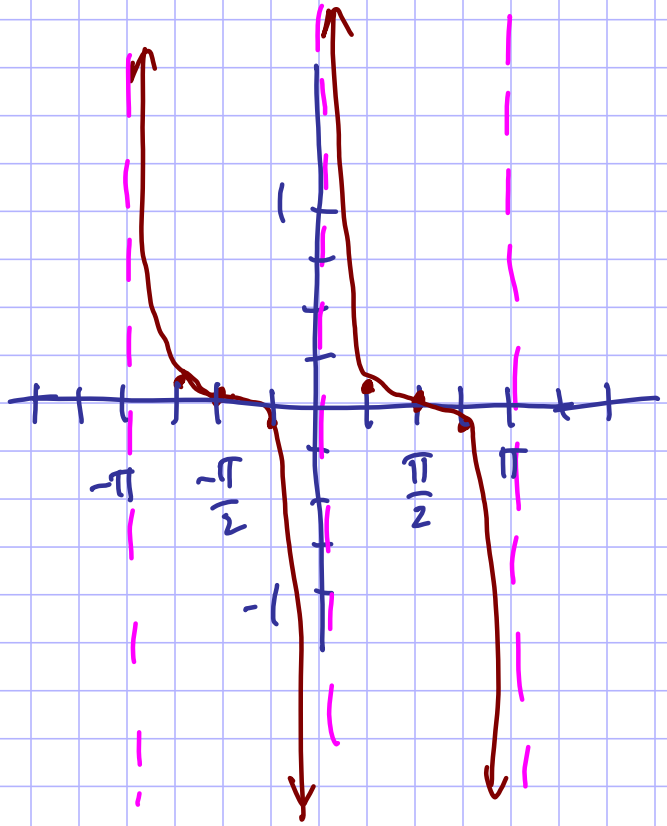
16. $j(x) = 0.1\cot x$

$per = \frac{\pi}{|b|} = \pi$

asymp: $\frac{\pi}{|b|} + \frac{n\pi}{|b|}$

$= \pi + n\pi$

X-int: $-\frac{\pi}{2}, \frac{\pi}{2} = -\frac{\pi}{2} + n\pi$

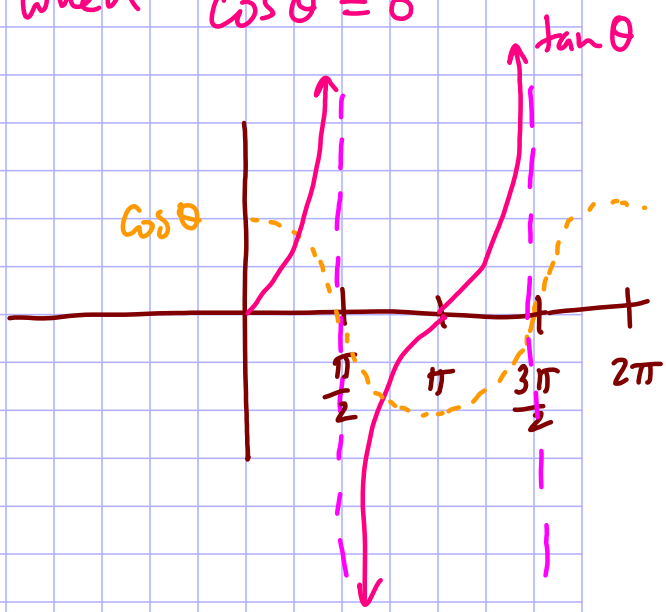


21. $f(\theta) = \tan\theta = \dfrac{\sin\theta}{\cos\theta}$

$\theta = \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \cdots$

$\boxed{\theta = \frac{\pi}{2} + n\pi}$

$\tan\theta$ is undefined when $\cos\theta = 0$

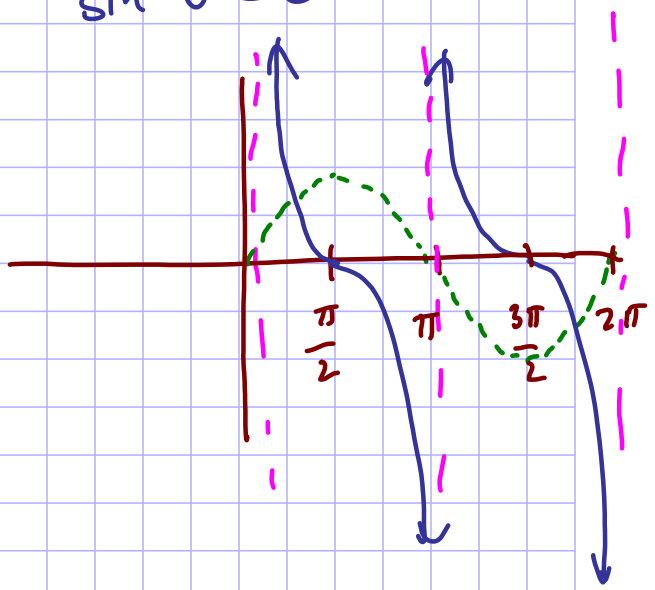


22. $g(\theta) = \cot\theta = \dfrac{\cos\theta}{\sin\theta}$

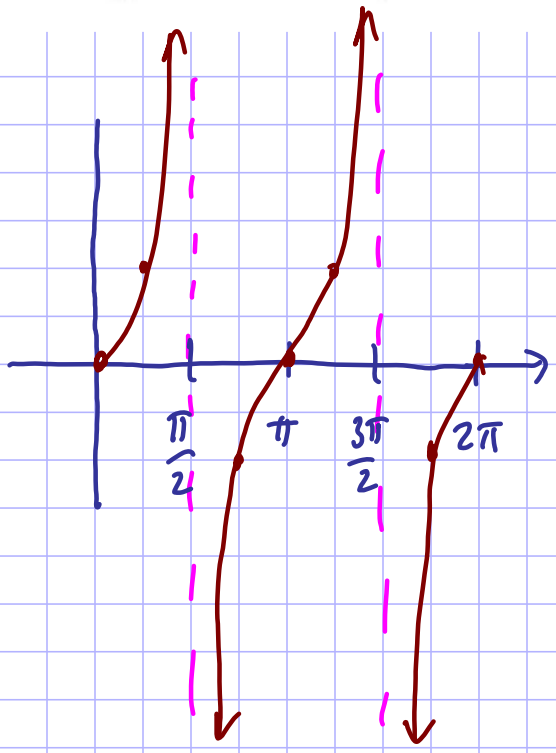
$\theta = 0, \pi, 2\pi, \cdots$

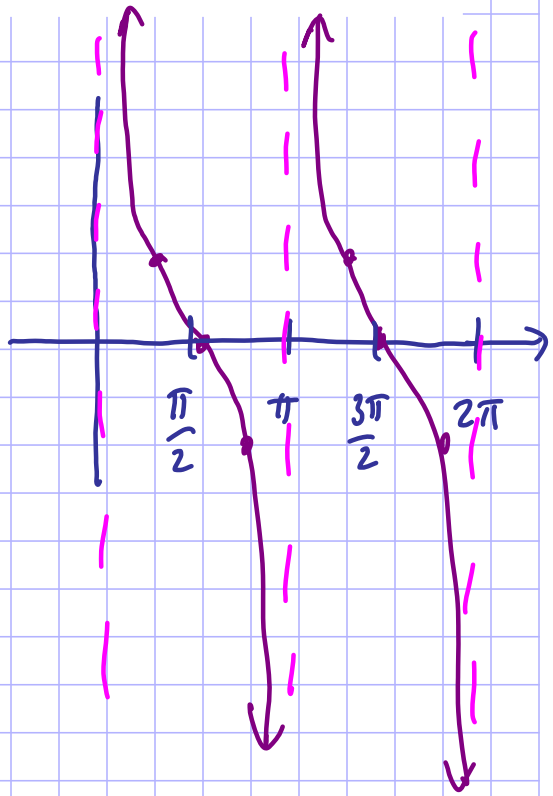
$\boxed{\theta = n\pi}$

$\cot\theta$ is undefined when $\sin\theta = 0$



		$0<x<\frac{\pi}{2}$	$\frac{\pi}{2}<x<\pi$	$\pi<x<\frac{3\pi}{2}$	$\frac{3\pi}{2}<x<2\pi$
27.	sinx	↑	↓	↓	↑
28.	cscx	↓	↑	↑	↓
29.	cosx	↓	↓	↑	↑
30.	secx	↑	↑	↓	↑
31.	tanx	↑	↑	↑	↑
32.	cotx	↓	↓	↓	↓





33. The reciprocal pairs of trig functions travel in opposite directions of each other. When one increases, the other decreases.