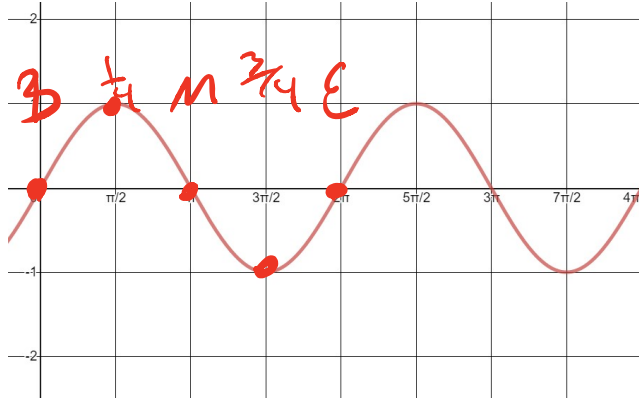


Notes 11.2 Developing and Analyzing the Graphs of the Six Trigonometric Functions

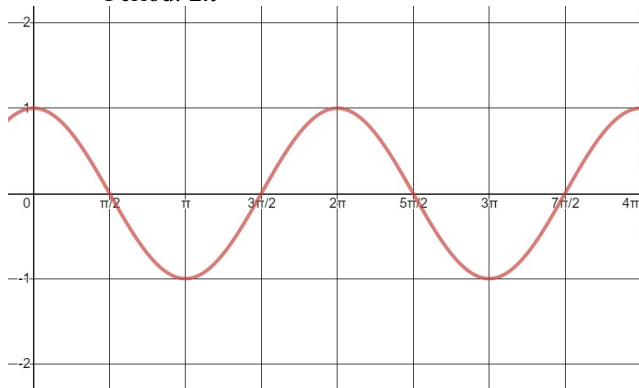
$F(\theta) = \sin \theta$

Domain: $(-\infty, \infty)$
 Range: $[-1, 1]$
 Period: 2π



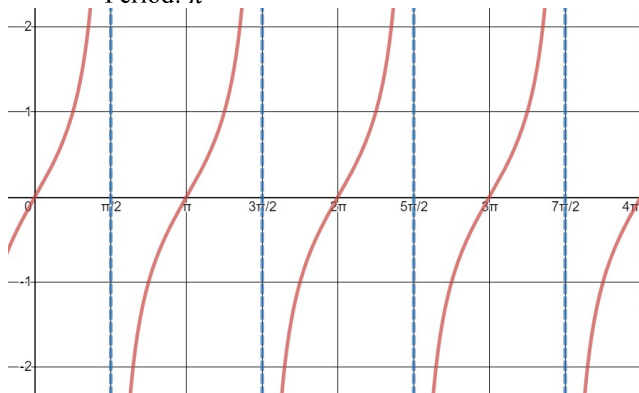
$F(\theta) = \cos \theta$

Domain: $(-\infty, \infty)$
 Range: $[-1, 1]$
 Period: 2π



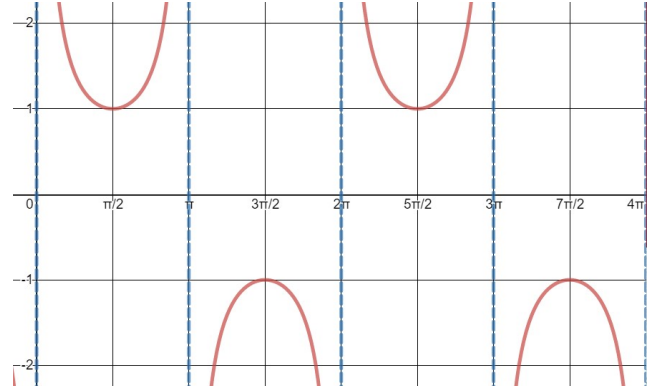
$F(\theta) = \tan \theta$

Domain: \mathbb{R} except $(\frac{\pi}{2} + \pi k)$ where $k \in \mathbb{Z}$
 Range: $(-\infty, \infty)$
 Period: π



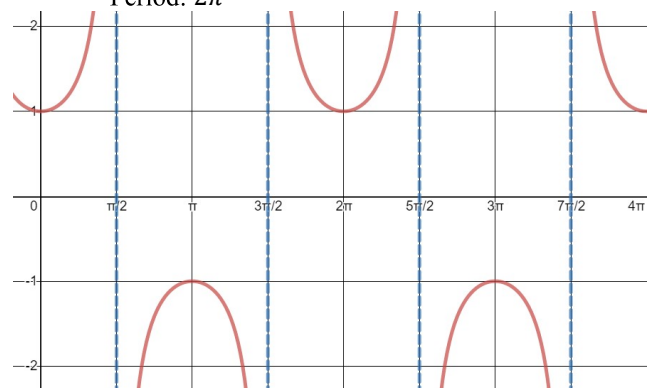
$F(\theta) = \csc \theta$

Domain: \mathbb{R} except (πk) where $k \in \mathbb{Z}$
 Range: $(-\infty, -1] \cup [1, \infty)$
 Period: 2π



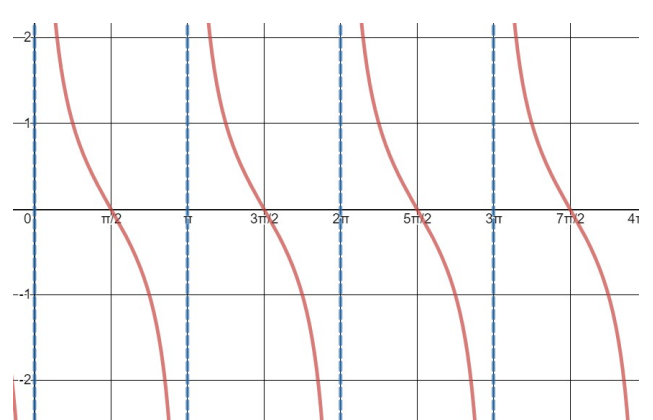
$F(\theta) = \sec \theta$

Domain: \mathbb{R} except $(\frac{\pi}{2} + \pi k)$ where $k \in \mathbb{Z}$
 Range: $(-\infty, -1] \cup [1, \infty)$
 Period: 2π



$F(\theta) = \cot \theta$

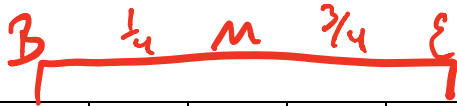
Domain: \mathbb{R} except (πk) where $k \in \mathbb{Z}$
 Range: $(-\infty, \infty)$
 Period: π



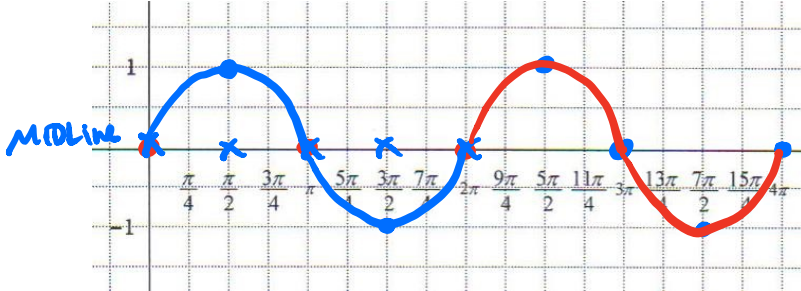
$$F(\theta) = \sin \theta$$

Complete the table for $F(\theta) = \sin \theta$.

Then, graph ~~as 2 cycles as you can~~ for the interval $0 \leq \theta \leq 4\pi$.



θ	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π	$\frac{5\pi}{2}$	3π	$\frac{7\pi}{2}$	4π
$F(\theta) = \sin \theta$	0	1	0	-1	0	1	0	-1	0



Domain: $(-\infty, \infty)$
 Range: $[-1, 1]$
 Period: 2π

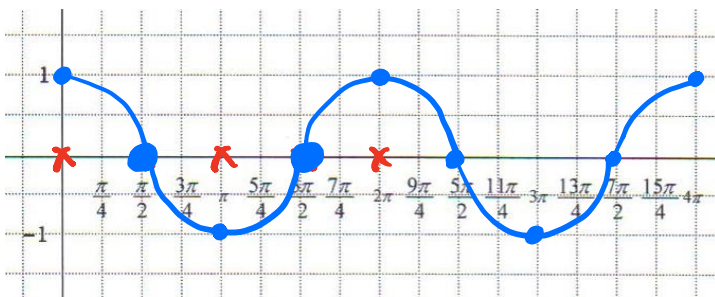
$$F(\theta) = \cos \theta$$

Complete the table for $F(\theta) = \cos \theta$.

Then, graph as 2 cycles as you can for the interval $0 \leq \theta \leq 4\pi$.



θ	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π	$\frac{5\pi}{2}$	3π	$\frac{7\pi}{2}$	4π
$F(\theta) = \cos \theta$	1	0	-1	0	1	0	-1	0	1



Domain: \mathbb{R}
 Range: $[-1, 1]$
 Period: 2π

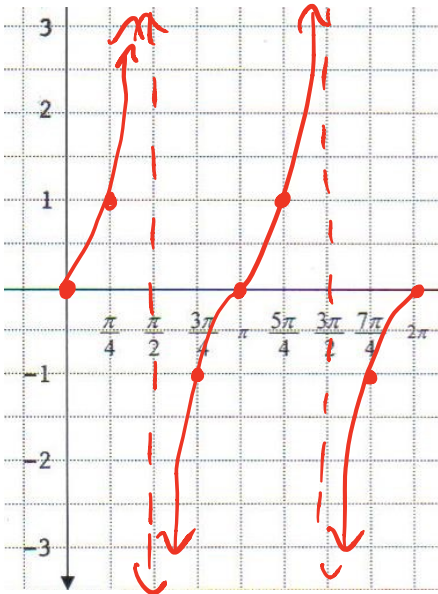
$F(\theta) = \tan \theta$

Complete the table for $F(\theta) = \tan \theta$.

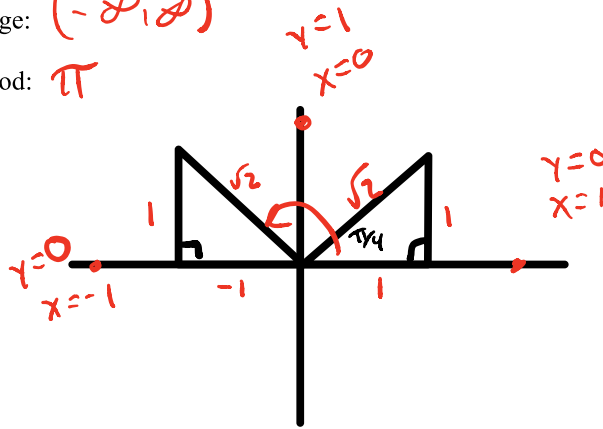
Then, graph as 2 cycles as you can for the interval $0 \leq \theta \leq 2\pi$.

B 1/4 n 3/4 E

θ	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$	π	$\frac{5\pi}{4}$	$\frac{3\pi}{2}$	$\frac{7\pi}{4}$	2π
$F(\theta) = \tan \theta$	0	1	und	-1	0	1	und	-1	0



Domain: \mathbb{R} except $(\frac{\pi}{2} + \pi k)$ where $k \in \mathbb{Z}$
 Range: $(-\infty, \infty)$
 Period: π

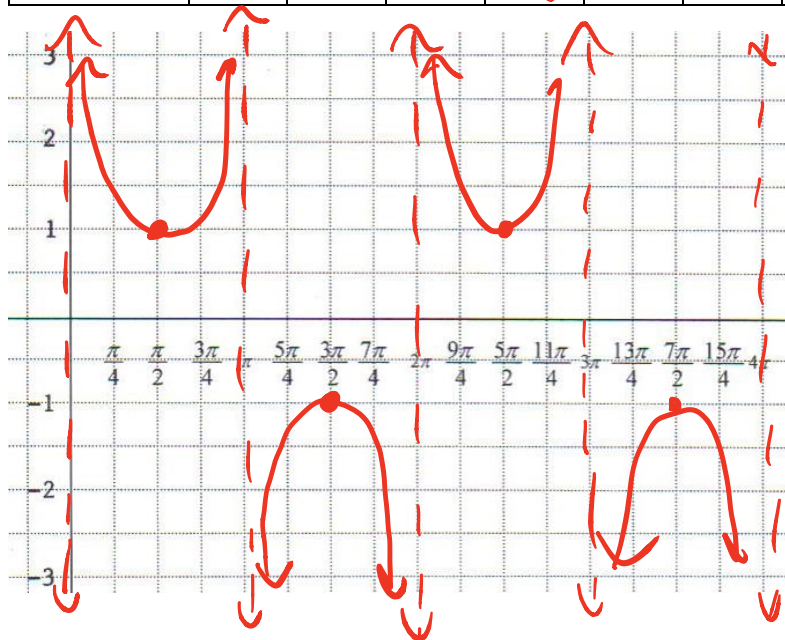


$F(\theta) = \csc \theta$

Complete the table for $F(\theta) = \csc \theta$.

Then, graph as 2 cycles as you can for the interval $0 \leq \theta \leq 4\pi$.

θ	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π	$\frac{5\pi}{2}$	3π	$\frac{7\pi}{2}$	4π
$F(\theta) = \csc \theta$	und	1	und	-1	und	1	und	-1	und



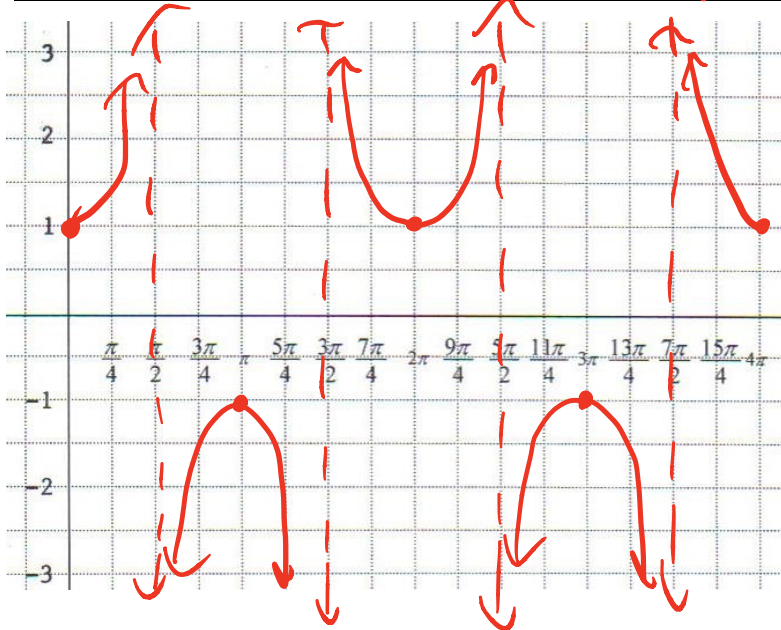
Domain: \mathbb{R} except πk where $k \in \mathbb{Z}$
 Range: $(-\infty, -1] \cup [1, \infty)$
 Period: 2π

$$F(\theta) = \sec \theta$$

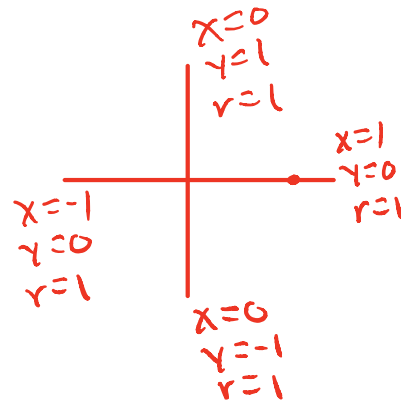
Complete the table for $F(\theta) = \sec \theta$.

Then, graph as 2 cycles as you can for the interval $0 \leq \theta \leq 4\pi$.

θ	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π	$\frac{5\pi}{2}$	3π	$\frac{7\pi}{2}$	4π
$F(\theta) = \sec \theta$	1	und	-1	und	1	und	-1	und	1



Domain: \mathbb{R} except $(\frac{\pi}{2} + \pi k)$ where $k \in \mathbb{Z}$
 Range: $(-\infty, -1] \cup [1, \infty)$
 Period: 2π

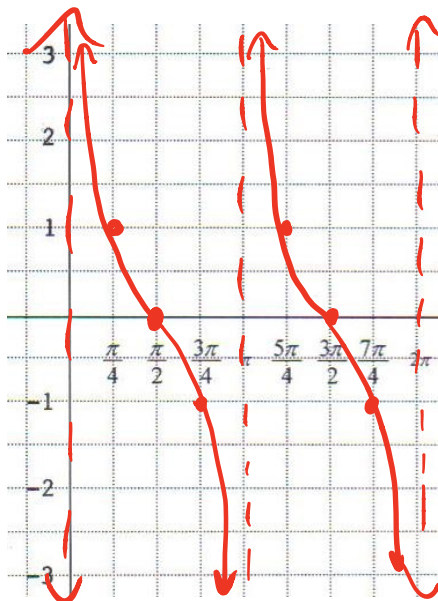


$$F(\theta) = \cot \theta$$

Complete the table for $F(\theta) = \cot \theta$.

Then, graph as 2 cycles as you can for the interval $0 \leq \theta \leq 2\pi$.

θ	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$	π	$\frac{5\pi}{4}$	$\frac{3\pi}{2}$	$\frac{7\pi}{4}$	2π
$F(\theta) = \cot \theta$	und	1	0	-1	und	1	0	-1	und



Domain: \mathbb{R} except πk where $k \in \mathbb{Z}$
 Range: $(-\infty, \infty)$
 Period: π

