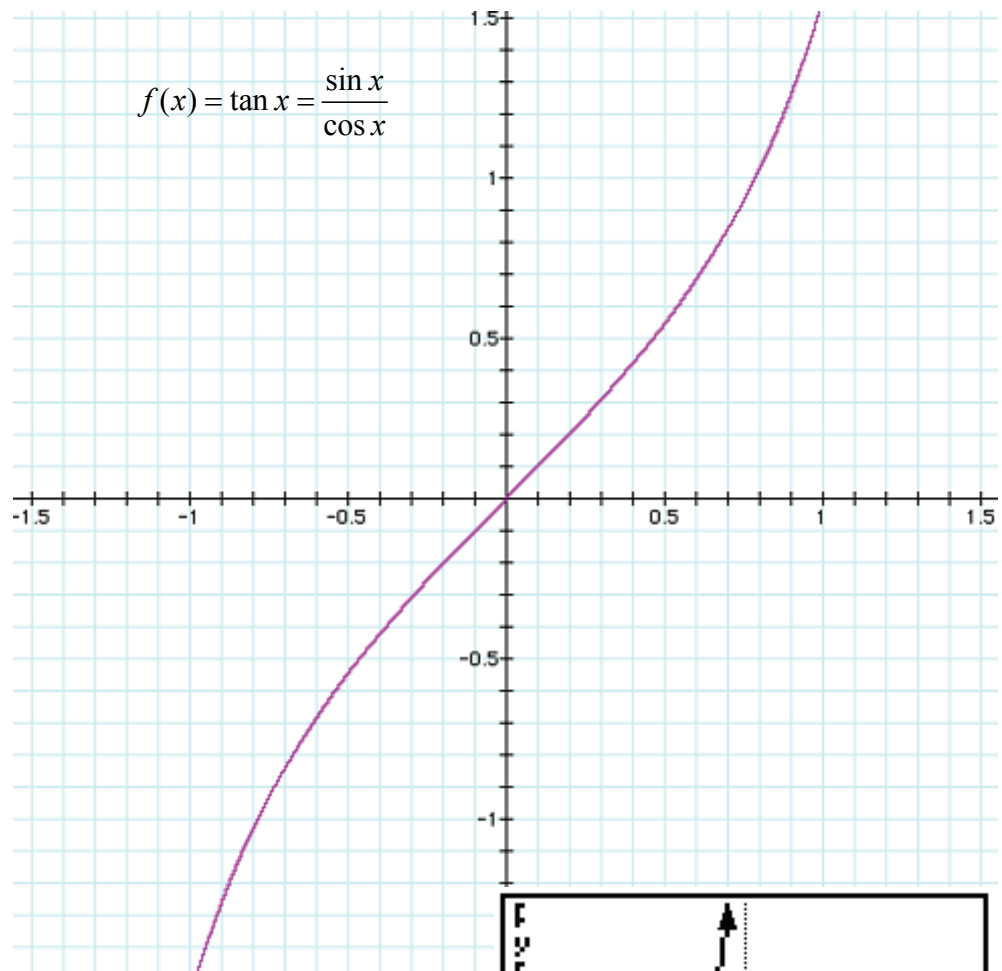


Unit 6 Lesson 8: Tangent/Cotangent Graphs

Tangent:

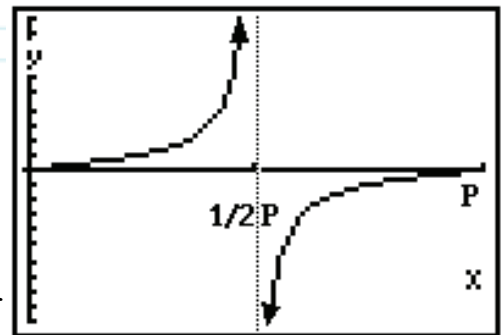


Period is π or $\frac{\pi}{|b|}$

- $\tan(-x) = -\tan(x) \rightarrow$ Odd Function
- Symmetric to the Origin
- Asymptote occurs at $\frac{1}{2}$ of Period
- Domain $\left\{ x : x \in R; x \neq \frac{\pi}{2} \pm n\pi \right\}$ where n is an integer

or $\left\{ x : x \in R; x \neq \frac{n\pi}{2} \right\}$ where n is an odd integer

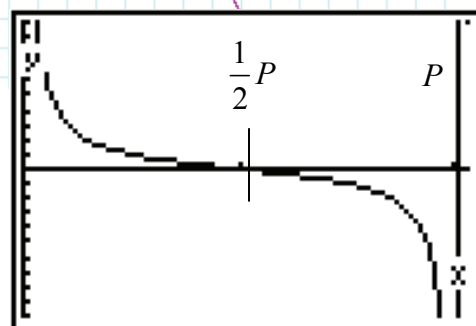
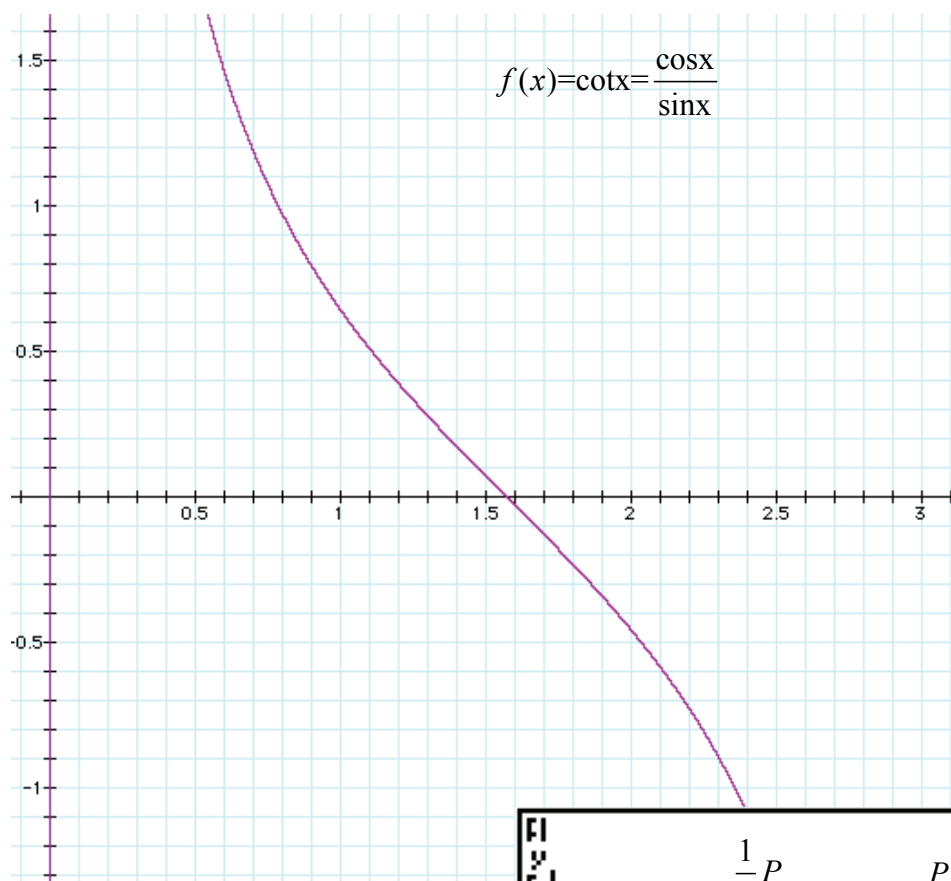
- Range $\{ y : y \in R \}$
- x-intercepts $\dots, -2\pi, -\pi, 0, \pi, 2\pi, 3\pi, \dots$
- y-intercept occurs at $(0,0)$



Observe 1 Period past the origin for Tangent:

Unit 6 Lesson 8: Tangent/Cotangent Graphs

Cotangent:



- Period is π or $\frac{\pi}{|b|}$
- $\cot(-x) = -\cot(x) \rightarrow$ Odd Function
- Symmetric to the Origin
- Asymptote occurs at each Period
- Domain $\{x : x \in R; x \neq n\pi\}$ where n is an integer
- Range $\{y : y \in R\}$
- x-intercepts $\dots, -3\pi/2, -\pi/2, \pi/2, 3\pi/2, \dots$ or $\frac{n\pi}{2}$ where n is an odd integer
- y-intercept does not exist

Observe 1 period past the origin for Cotangent: