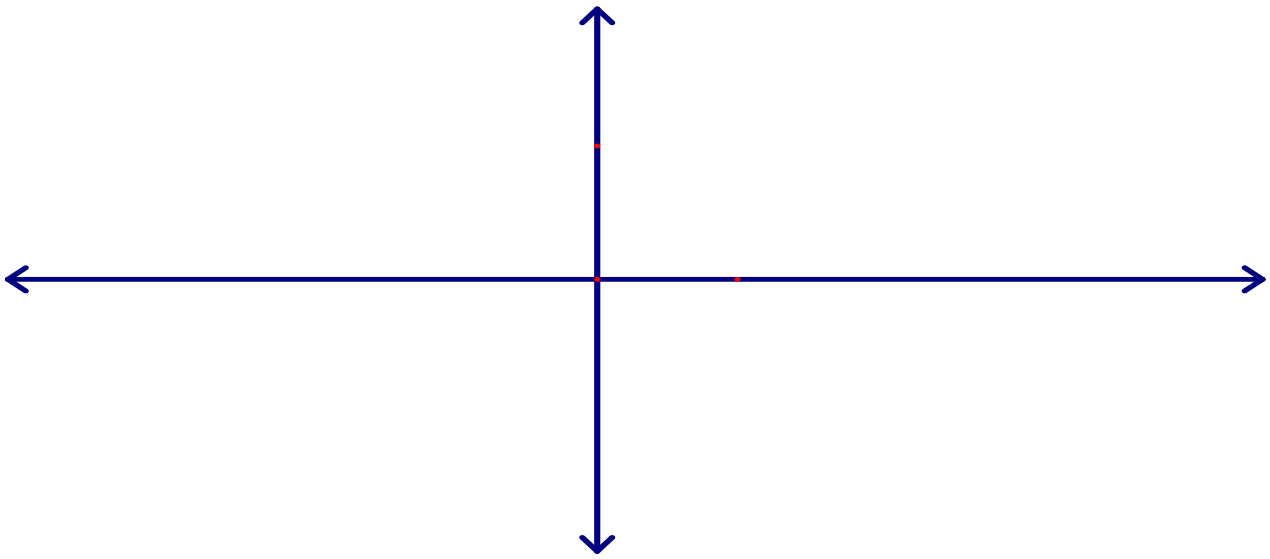
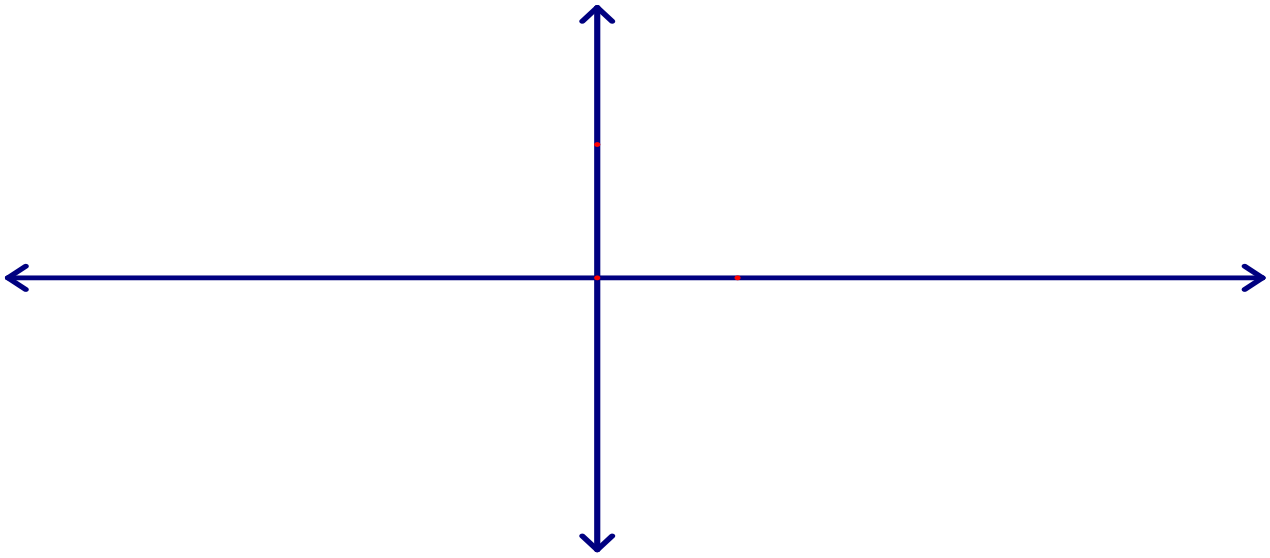
Section 4.6 (Day 2) – Graphs of Tangent & Cotangent Functions

Where do they come from?? Let's look back at that chart from 4.4:

θ	$\sin\theta$	$\cos\theta$	$\tan\theta$	$\cot\theta$
0°				
90°				
180°				
270°				





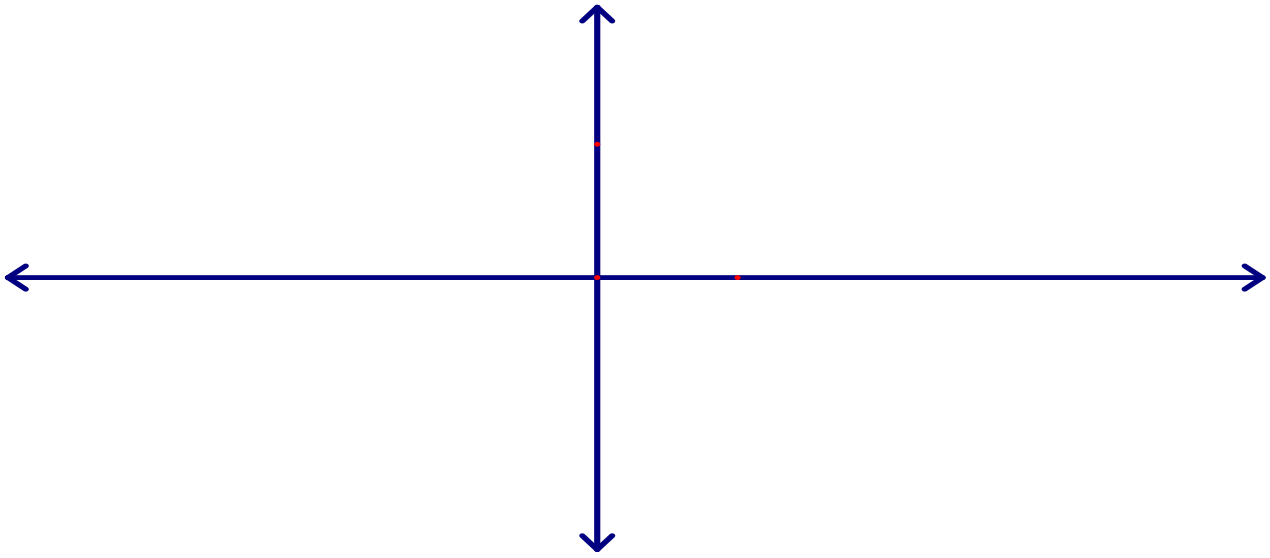
Section 4.6 (Day 2) – Graphs of Tangent & Cotangent Functions

How to graph tangent and cotangent

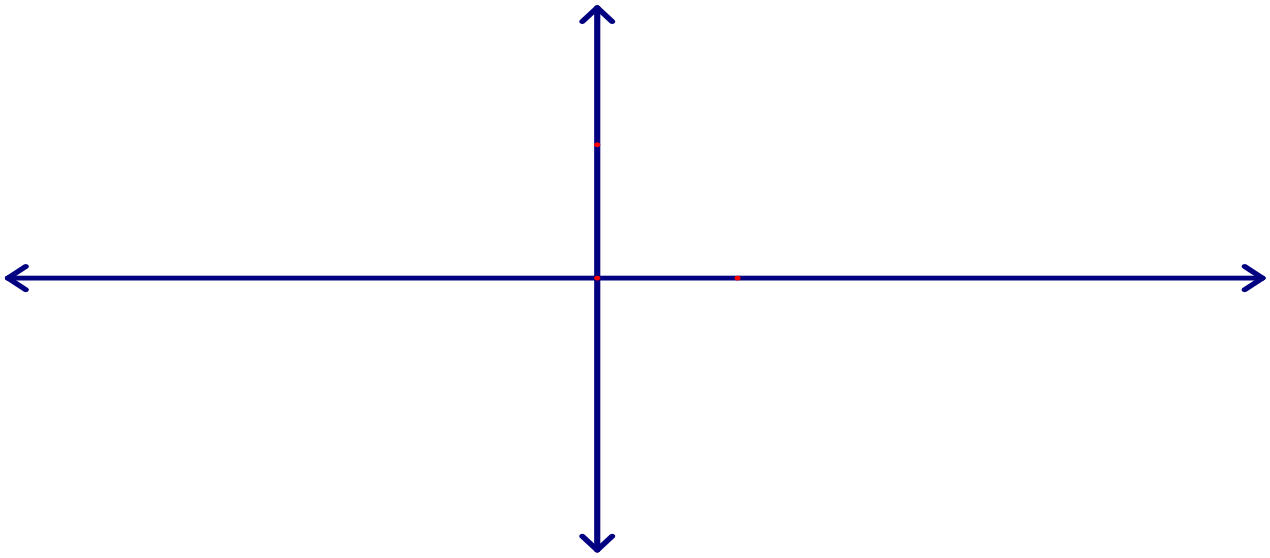
The biggest thing to remember here is that both these functions have π as their default period instead of 2π. So graph the asymptotes first, and then the rest of the function. Essentially you are just graphing a curve like $y = x^3$ a bunch of times.

Examples:

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



2) $y = -\frac{1}{3}\tan\frac{1}{2}x + 1$



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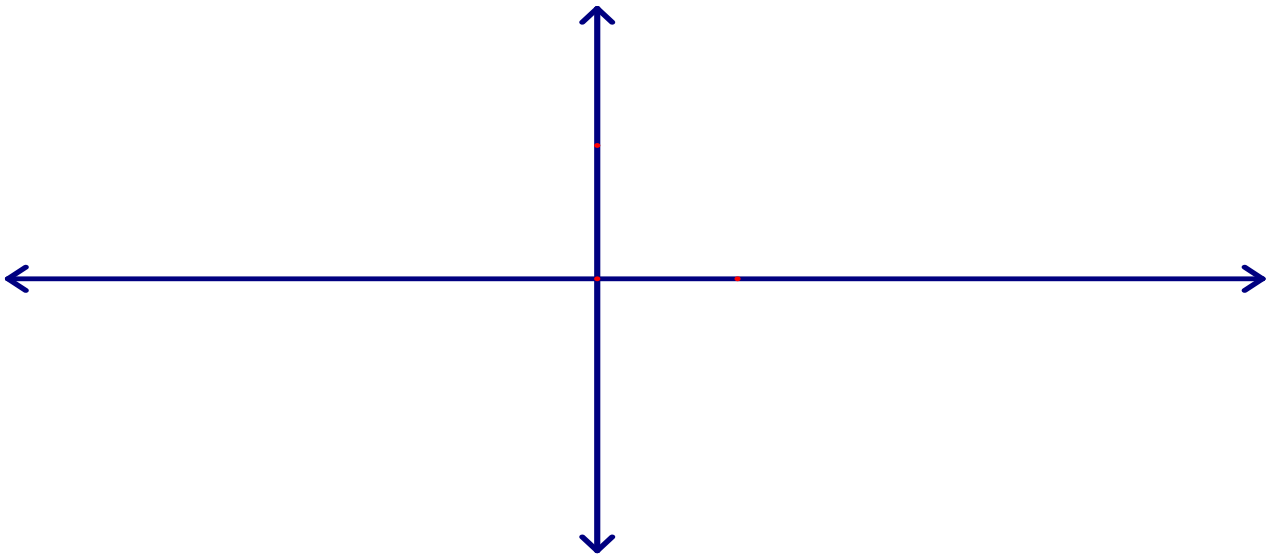
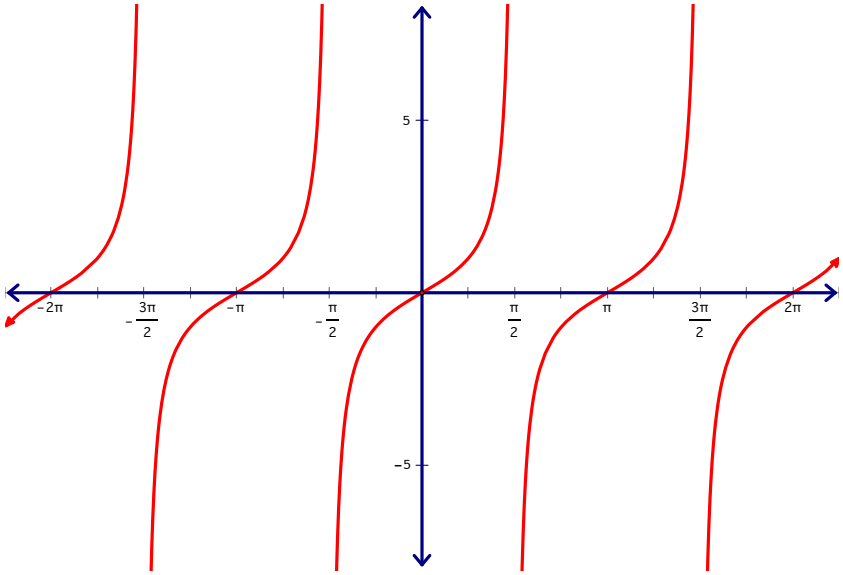
3) $y = 4\cot 2x$



Tangent Curve



- Domain: Range: Period:
- Symmetric with respect to the: *origin* so is and *odd function* $(\tan(-x) = -\tan x)$
- Zeros:
- Max: Min:

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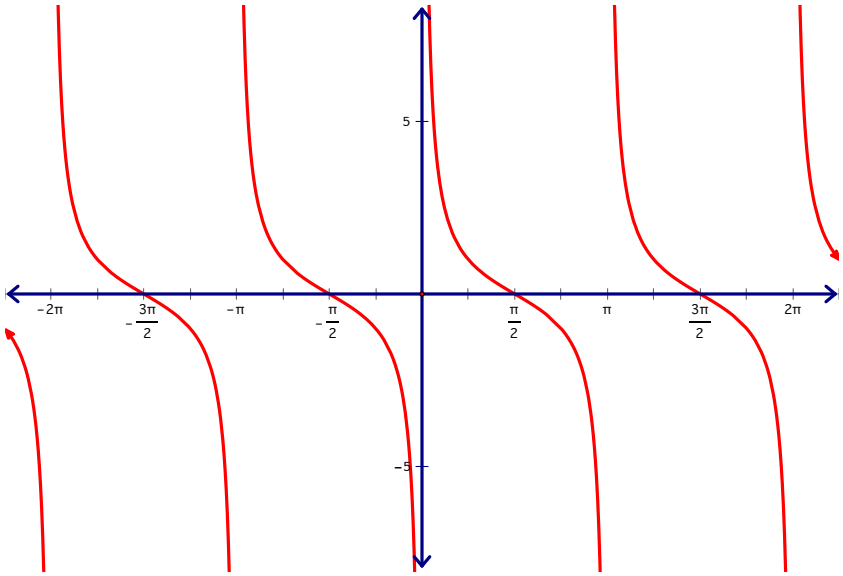
Cotangent Curve



- Domain: Range: Period:

- Symmetric with respect to the: *origin* so is and *odd function* $(\cot(-x) = -\cot x)$

- Zeros:

- Max: Min: