

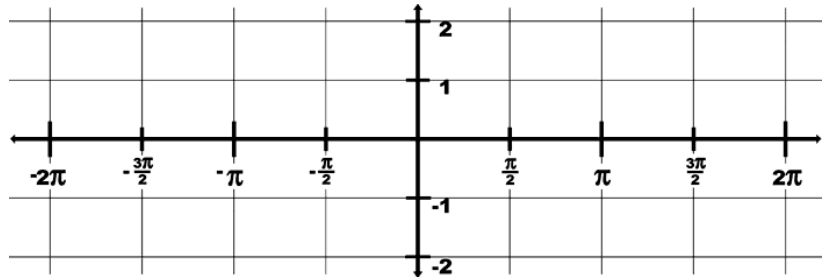
Unit #6: Graphs and Inverses of Trig Functions

Lesson #6: Graphing Tangent and Cotangent

Complete the following tables. Remember you may convert $\tan(x)$ and $\cot(x)$ into decimal values if needed. Plot each point on the given coordinate plane. Connect continuous points to make a smooth curve. Mark any vertical asymptotes with a dotted vertical line. Do not connect any points across these asymptotes.

Graphing $f(x)=\tan(x)$

x	y=tan(x)	(x,y)
-2π	0	$(-2\pi, 0)$
$-7\pi/4$	1	
$-3\pi/2$	undefined	VA
$-5\pi/4$		
$-\pi$		
$-3\pi/4$		
$-\pi/2$		
$-\pi/4$		
0		
$\pi/4$		
$\pi/2$		
$3\pi/4$		
π		
$5\pi/4$		
$3\pi/2$		
$7\pi/4$		
2π		

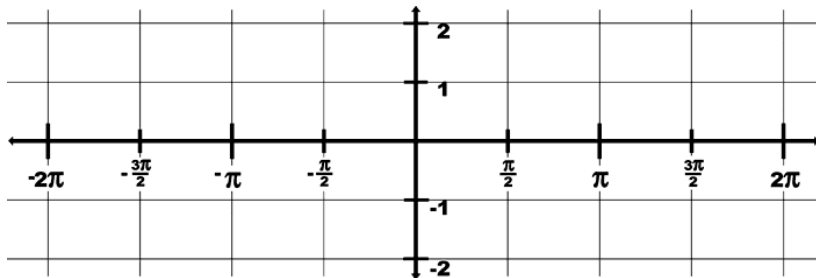


Facts to know about the tangent function:

1. The domain is _____
2. The range is _____
3. Tangent is symmetric to the _____, therefore it is an _____ function.
4. Tangent cycles every _____ or _____°.
5. The x-intercepts are _____(List 4)
6. The y-intercept is _____
7. The asymptotes occur at _____(list 4)

Graphing $f(x)=\cot(x)$

x	y=cot(x)	(x,y)
-2π	undefined	VA
$-7\pi/4$	1	$(-7\pi/4, 1)$
$-3\pi/2$		
$-5\pi/4$		
$-\pi$		
$-3\pi/4$		
$-\pi/2$		
$-\pi/4$		
0		
$\pi/4$		
$\pi/2$		
$3\pi/4$		
π		
$5\pi/4$		
$3\pi/2$		
$7\pi/4$		
2π		



Facts to know about the cotangent function:

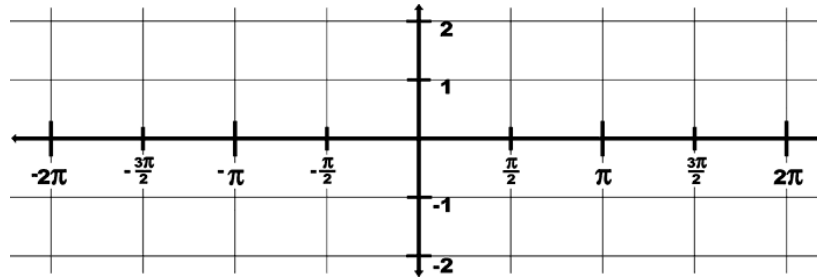
1. The domain is _____
2. The range is _____
3. Cotangent is symmetric to the _____, therefore it is an _____ function.
4. Cotangent cycles every _____ or _____°.
5. The x-intercepts are _____(List 4)
6. The y-intercept is _____
7. The asymptotes occur at _____(list 4)

Transformations of Tangent and Cotangent Functions

1. $y = \tan(x - \pi/2)$

- How is this graph transformed? _____
- What happens to the x-value? _____
- What about the y-value? _____
- Has the period changed? _____
- Have the asymptotes changed? _____

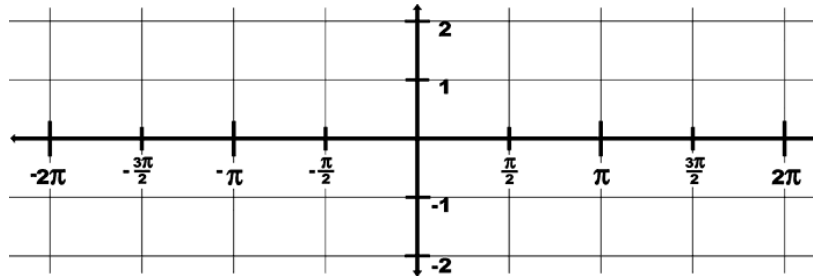
Sketch a graph of the transformed function



2. $y = -2\tan(x)$

- How is this graph transformed? _____
- What happens to the x-value? _____
- What about the y-value? _____
- Has the period changed? _____
- Have the asymptotes changed? _____

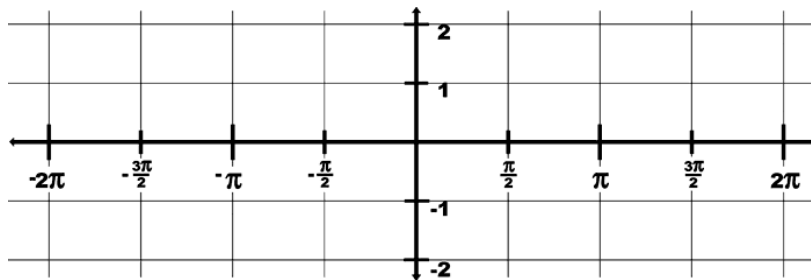
Sketch a graph of the transformed function



3. $y = \cot(x) + 1$

- How is this graph transformed? _____
- What happens to the x-value? _____
- What about the y-value? _____
- Has the period changed? _____
- Have the asymptotes changed? _____

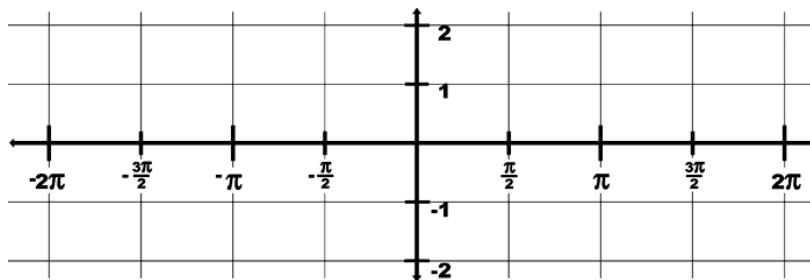
Sketch a graph of the transformed function



4. $y = \cot(2x)$

- How is this graph transformed? _____
- What happens to the x-value? _____
- What about the y-value? _____
- Has the period changed? _____
- Have the asymptotes changed? _____

Sketch a graph of the transformed function



Assignment: PW#1: Graphs of Tangent and Cotangent

PW #2: Graphs of Tangent, Cotangent, Secant, & Cosecant