TRANSFORMATIONS:

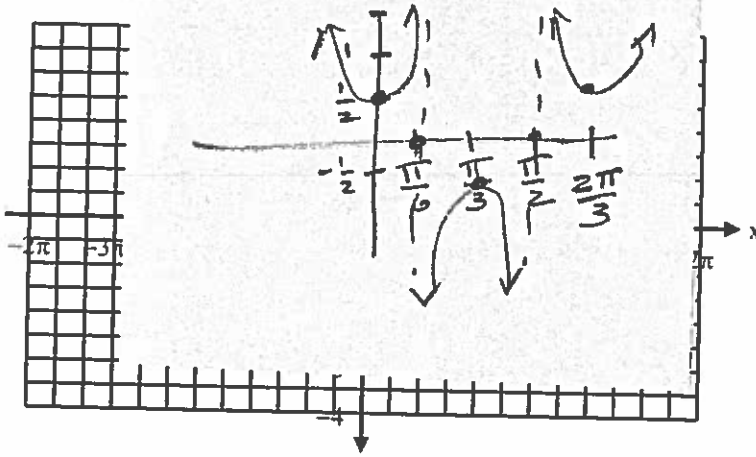
	Secant	Cosecant
General Equation	$y = a\sec b(\theta - c) + d$	$y = a\csc b(\theta - c) + d$
Period	$\frac{2\pi}{b}$	$\frac{2\pi}{b}$
To Find Domain and Asymptote Equation	$x = \frac{\frac{\pi}{2} + n\pi}{b} + c$	$x = \frac{n\pi}{b} + c$

1.) $y = \frac{1}{2}\sec 3\theta$

b = 3 Period: $\frac{2\pi}{3}$ Phase Shift: —

V. Shift: — 2 asym: $\frac{\pi}{6}, \frac{\pi}{2}$

Asympt

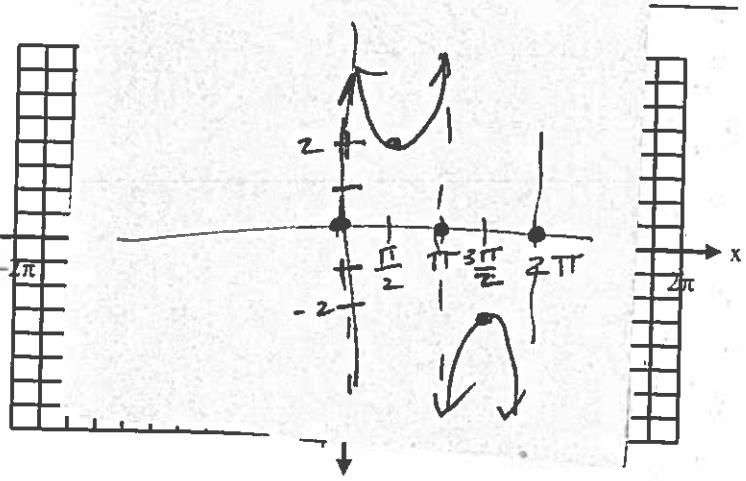


Domain: _____ Range: _____

2.) $y = 2\csc\theta - 1$

b = 1 Period: 2π Phase shift: —

V. Shift: -1 2 asym: $0, \pi, 2\pi$



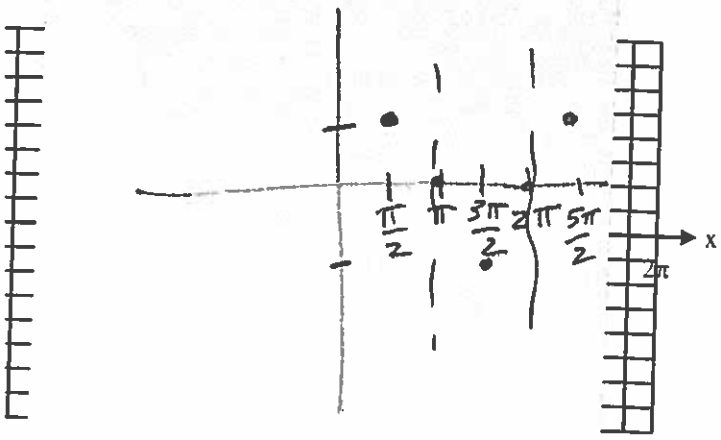
Domain: _____ Range: _____

3.) $y = \sec(\theta - \frac{\pi}{2})$

b = 1 Period: 2π Phase Shift: $\frac{\pi}{2}$

V. Shift: — 2 asym: $\pi, 2\pi$

As

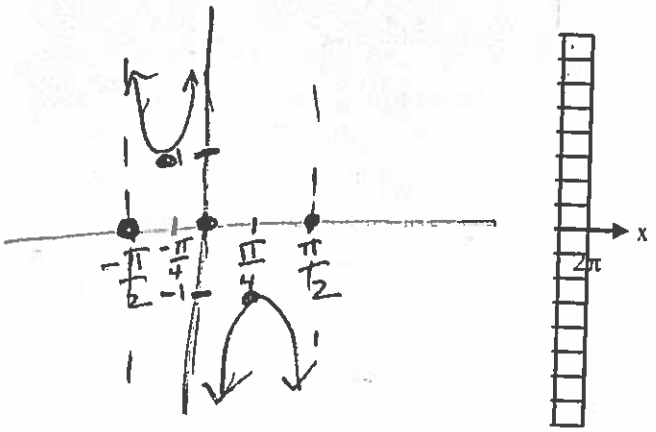


D

4.) $y = \csc 2(\theta + \frac{\pi}{2})$

b = 2 Period: π Phase shift: $-\frac{\pi}{2}$

V. Shift: — 2 asym: $-\frac{\pi}{2}, 0, \frac{\pi}{2}$



Domai

NOTES **Tangent**

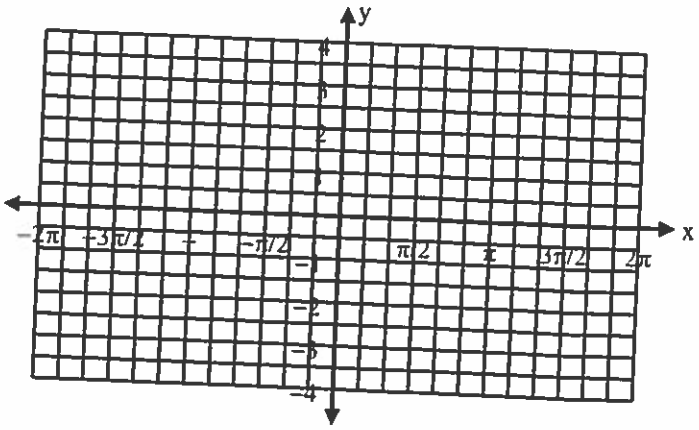
Parent equation: _____

Domain: _____

Range: _____ **Period:** _____

Equation of Asymptotes: _____

Two Specific Asymptotes: _____



Cotangent

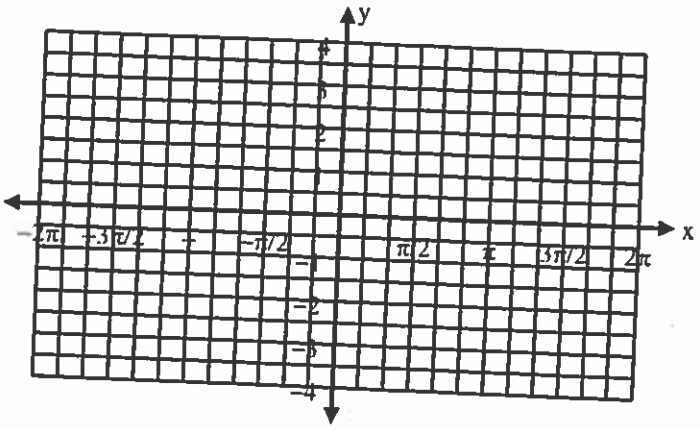
Parent equation: _____

Domain: _____

Range: _____ **Period:** _____

Equation of Asymptotes: _____

Two Specific Asymptotes: _____



TRANSFORMATIONS:

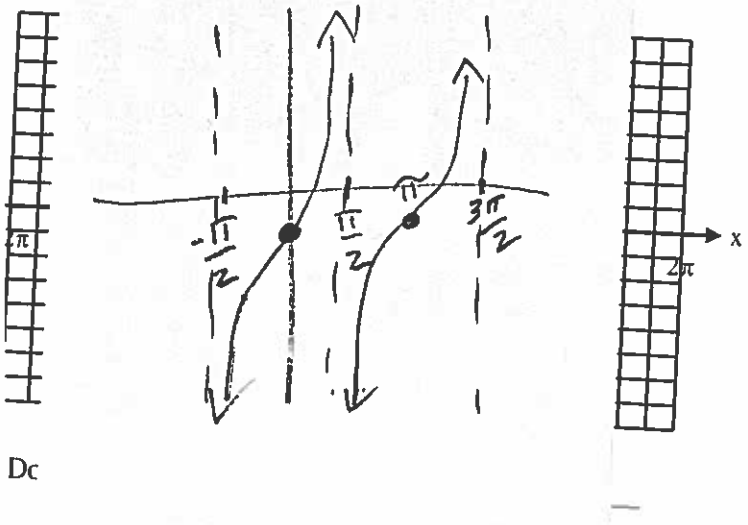
Tangent	$y = a\tan b(\theta - c) + d$	Period = $\frac{\pi}{b}$	Domain/Asymptotes	$x = \frac{\frac{\pi}{2} + n\pi}{b} + c$
Cotangent	$y = a\cot b(\theta - c) + d$	Period = $\frac{\pi}{b}$	Domain/Asymptotoes	$x = \frac{n\pi}{b} + c$

1.) $y = 2\tan\theta - 1$

b = 1 Period: π Phase Shift: —

V. Shift: −1 2 asym: $-\frac{\pi}{2}, \frac{\pi}{2}, \frac{3\pi}{2}\ldots$

As



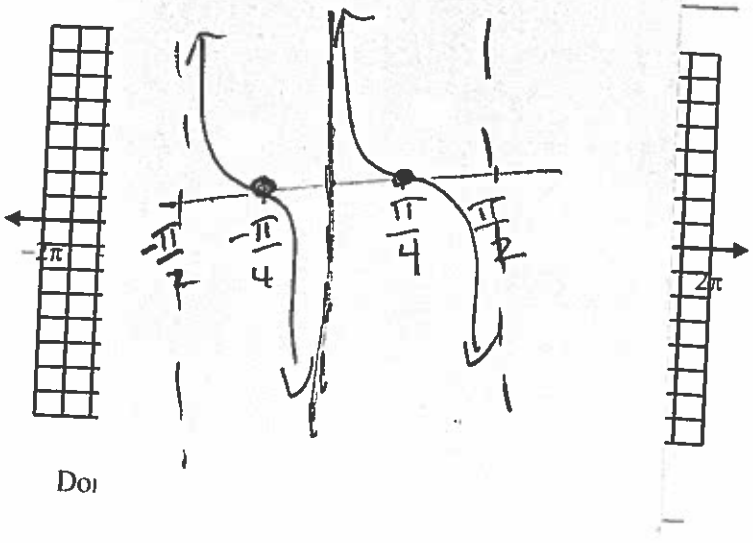
Dc

2.) $y = \cot 2(\theta - \frac{\pi}{6})$

b = 2 Period: $\frac{\pi}{2}$ Phase shift: $\frac{\pi}{6}$

V. Shift: — 2 asym: _____

As



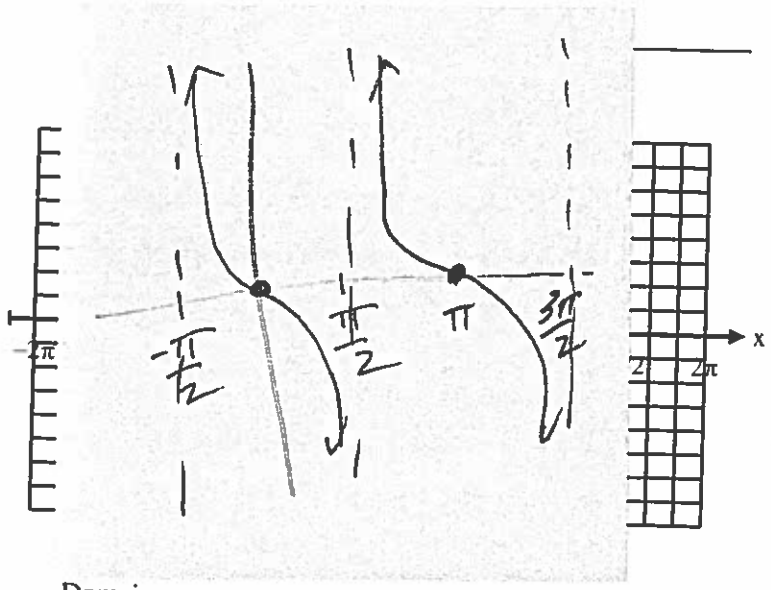
Do

Sketch the graph. Determine b, the period, phase shift, vertical shift, 2 specific asymptotes, the asym equation, domain and range.

3.) $y = -\tan\theta$

b = 1 Period: π Phase Shift: —

V. Shift: — 2 asym: $-\frac{\pi}{2}$ $\frac{\pi}{2}$

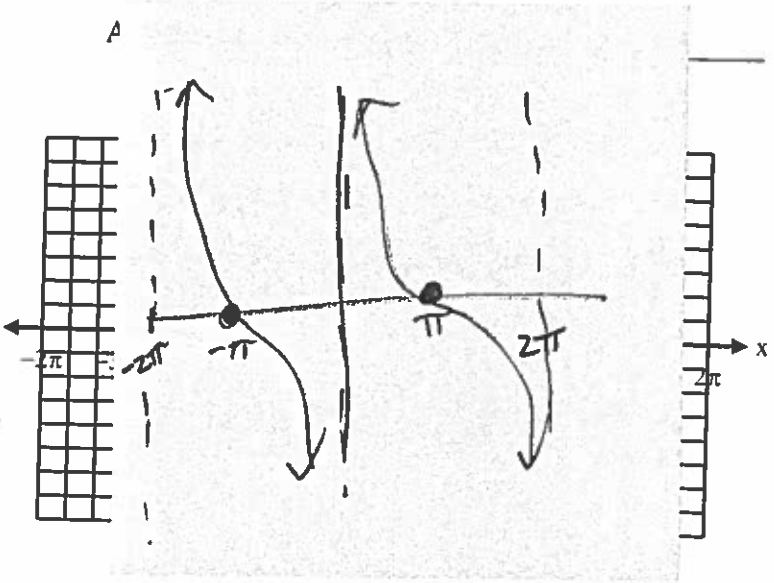


Domain: _____ Range: _____

4.) $y = \frac{1}{2}\cot\frac{1}{2}\theta$

b = $\frac{1}{2}$ Period: 2π Phase shift: —

V. Shift: — 2 asym: -2π, 0, 2π



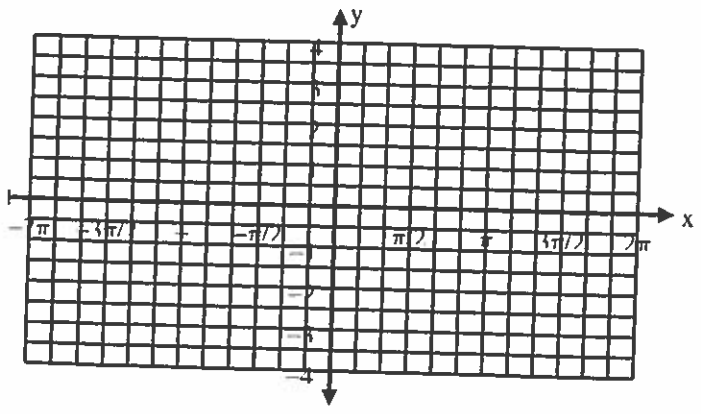
Domain: _____ Range: _____

5.) $y = \tan(\theta + \frac{2\pi}{3}) + 2$

b = _____ Period: _____ Phase Shift: _____

V. Shift: _____ 2 asym: _____

Asymptote Eq: _____



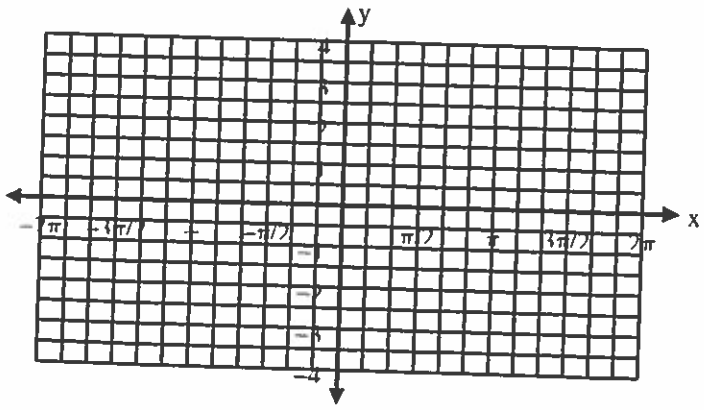
Domain: _____ Range: _____

6.) $y = -2\cot\theta$

b = _____ Period: _____ Phase shift: _____

V. Shift: _____ 2 asym: _____

Asymptote Eq: _____



Domain: _____ Range: _____