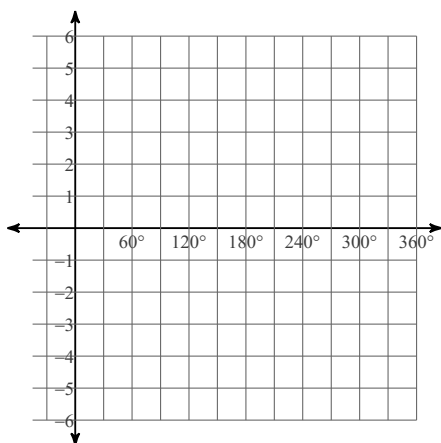


## 6.6 Graphing the Cotangent Function

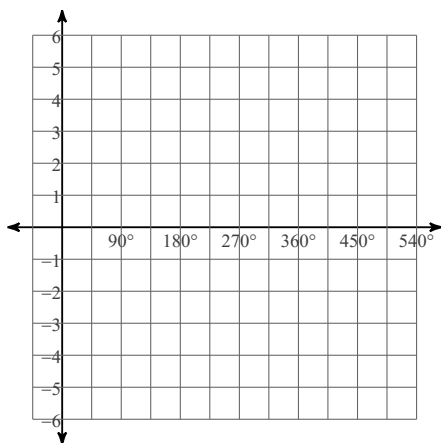
- 1) The Cotangent function and Tangent function are very closely related in its appearance. The difference is that since the Tangent is  $\frac{y}{x}$  and starting at  $0^\circ$  implies  $y = 0$ , the tangent increased from Left to Right. The Cotangent being  $\frac{x}{y}$  starts at asymptote and gets smaller from left to right.
- General form:  $y = a \cot (b(x - h)) + k$
- The Cotangent function has a period that is same as Tangent which is  $\pi$ . So once again, we need to focus on the ordered pairs at  $0^\circ, 45^\circ, 90^\circ, 135^\circ, 180^\circ$ .

**Find the amplitude, the period in degrees, the phase shift in degrees, the vertical shift, the minimum and maximum values, and a vertical asymptotes. Then sketch the graph using degrees.**

2)  $y = \cot \theta$

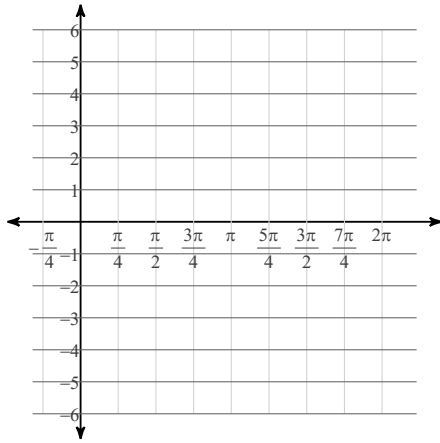


3)  $y = 4\cot\left(\frac{\theta}{2} + 45\right) + 1$

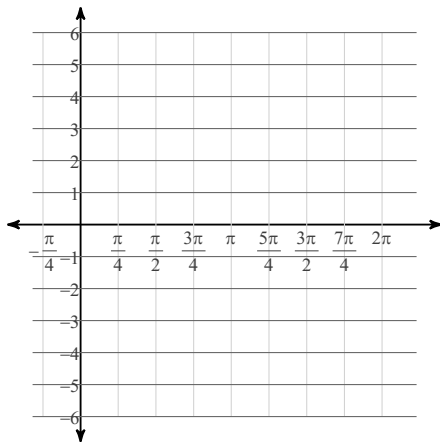


Find the amplitude, the period in radians, the phase shift in radians, the vertical shift, the minimum and maximum values, and a vertical asymptote. Then sketch the graph using radians.

4)  $y = \cot \theta$



5)  $y = -2 + 2\cot\left(2\theta - \frac{\pi}{2}\right)$

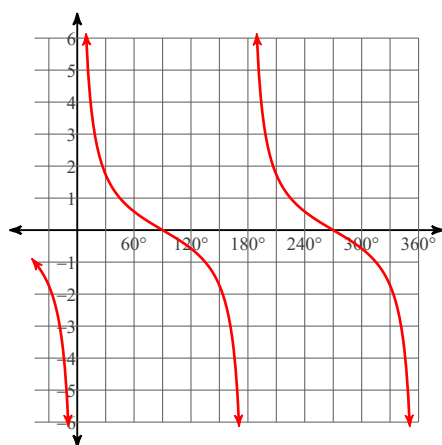


## 6.6 Graphing the Cotangent Function

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- General form:  $y = a \cot(b(x - h)) + k$
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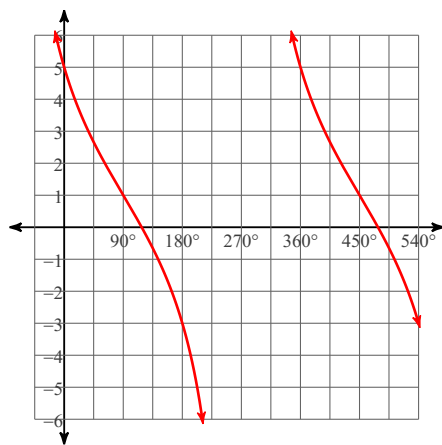
**Find the amplitude, the period in degrees, the phase shift in degrees, the vertical shift, the minimum and maximum values, and a vertical asymptotes. Then sketch the graph using degrees.**

2)  $y = \cot \theta$



Amplitude: None  
 Period:  $180^\circ$   
 Phase shift: None  
 Vert. shift: None  
 Min: None  
 Max: None  
 Vert asym:  $x = 0$   
 $x = 180$

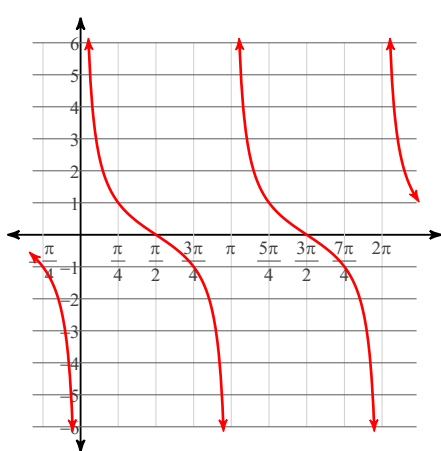
3)  $y = 4\cot\left(\frac{\theta}{2} + 45\right) + 1$



Amplitude: None  
 Period:  $360^\circ$   
 Phase shift: Left  $90^\circ$   
 Vert. shift: Up 1  
 Min: None  
 Max: None  
 Vert asym:  $x = -90$   
 $x = 270$

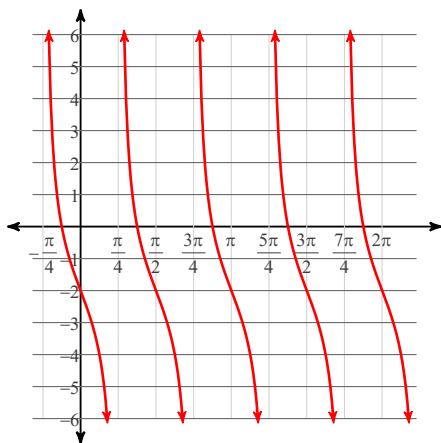
Find the amplitude, the period in radians, the phase shift in radians, the vertical shift, the minimum and maximum values, and a vertical asymptote. Then sketch the graph using radians.

4)  $y = \cot \theta$



Amplitude: None  
 Period:  $\pi$   
 Phase shift: None  
 Vert. shift: None  
 Min: None  
 Max: None  
 Vert asym:  $x = 0$   
 $x = \pi$

5)  $y = -2 + 2\cot\left(2\theta - \frac{\pi}{2}\right)$



Amplitude: None  
 Period:  $\frac{\pi}{2}$   
 Phase shift: Right  $\frac{\pi}{4}$   
 Vert. shift: Down 2  
 Min: None  
 Max: None  
 Vert asym:  $x = \frac{\pi}{4}$   
 $x = \frac{3\pi}{4}$