neg cot
pos tan

use 0, π
0°, 180°

pos cot
neg tan

Trig Graphing WS
Cotangent Graphs

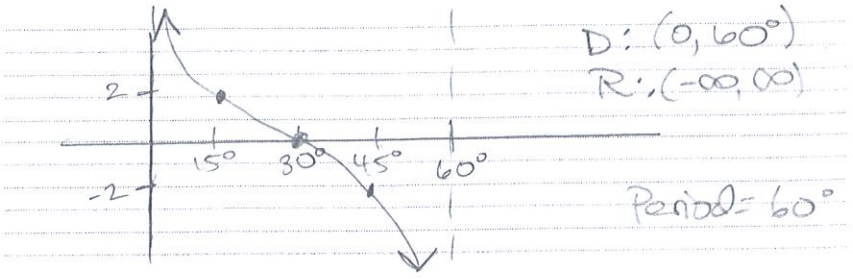
Name Key

Graph one complete period for each function and give the period, and domain and range of that period.

1) $y = 2\cot 3\theta$

$3\theta = 0$ $3\theta = 180°$

$\theta = 0°$ $\theta = 60°$

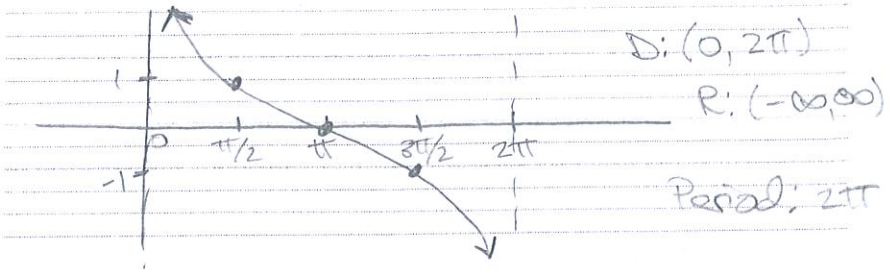


D: (0, 60°)
R: (−∞, ∞)
Period = 60°

2) $y = \cot\frac{x}{2}$

$\frac{x}{2} = 0$ $\frac{x}{2} = \pi$

$x = 0$ $x = 2\pi$

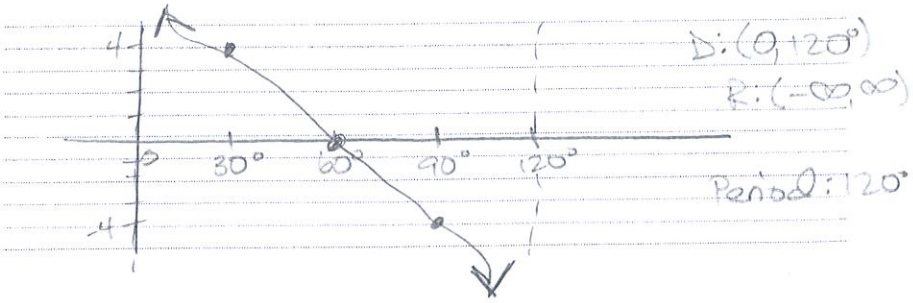


D: (0, 2π)
R: (−∞, ∞)
Period: 2π

3) $y = 4\cot\frac{3\theta}{2}$

$\frac{3\theta}{2} = 0$ $\frac{3\theta}{2} = 180°$ $(\frac{2}{3})$

$\theta = 0$ $\theta = 120°$



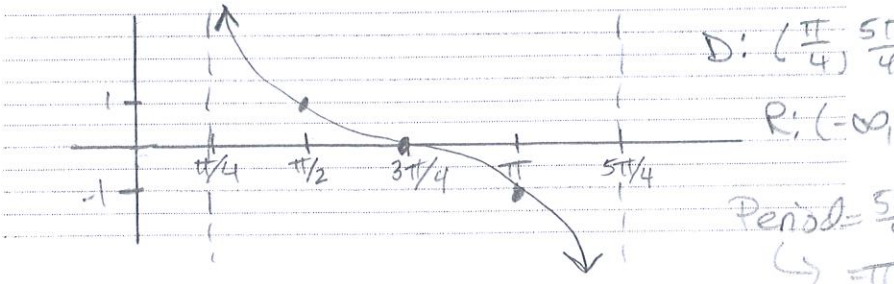
D: (0, 120°)
R: (−∞, ∞)
Period: 120°

4) $y = \cot\left(x - \frac{\pi}{4}\right)$

$x - \frac{\pi}{4} = 0$ $x - \frac{\pi}{4} = \pi$

$x = \frac{\pi}{4}$ $x = \frac{4\pi}{4} + \frac{\pi}{4}$

$x = \frac{5\pi}{4}$



D: $(\frac{\pi}{4}, \frac{5\pi}{4})$
R: (−∞, ∞)
Period = $\frac{5\pi}{4} - \frac{\pi}{4} = \frac{4\pi}{4}$
↳ $= \pi$

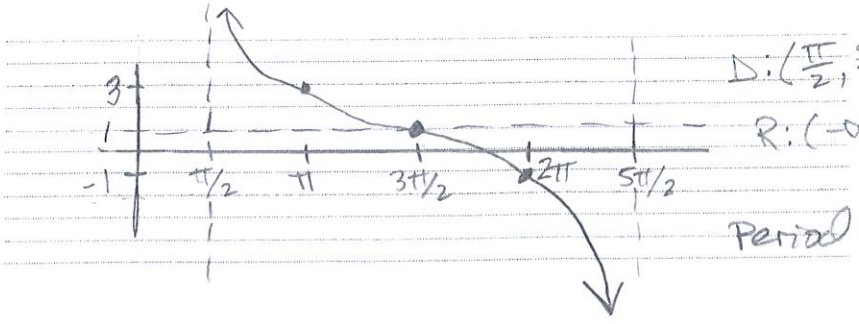
5) $y = 2\cot\left(\frac{x}{2} - \frac{\pi}{4}\right) + 1$

$\frac{x}{2} - \frac{\pi}{4} = 0$ $\frac{x}{2} - \frac{\pi}{4} = \pi$

(2) $\frac{x}{2} = \frac{\pi}{4}$ (2) $\frac{x}{2} = \frac{4\pi}{4} + \frac{\pi}{4}$

$x = \frac{\pi}{2}$ (2) $\frac{x}{2} = \frac{5\pi}{4}$ (2)

$x = \frac{5\pi}{2}$



D: $(\frac{\pi}{2}, \frac{5\pi}{2})$
R: (−∞, ∞)
Period: $\frac{5\pi}{2} - \frac{\pi}{2} = \frac{4\pi}{2} = 2\pi$