Trig Graphing WS
Tangent and Cotangent

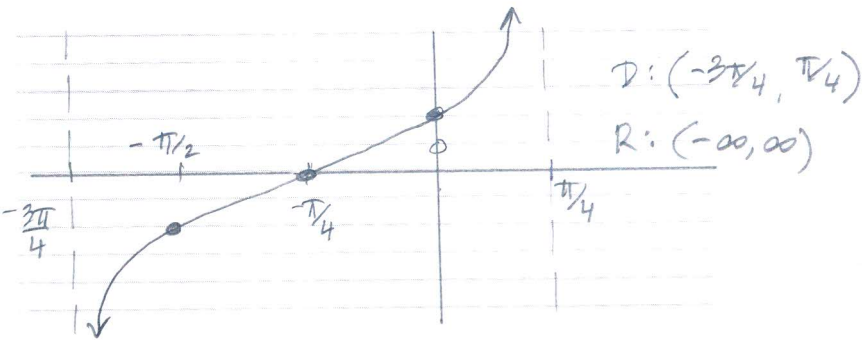
Name Fuston

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

1. $y = 2\tan\left(x + \frac{\pi}{4}\right)$

$x + \pi/4 = -\pi/2$ $\quad x + \pi/4 = \pi/2$

$x = -3\pi/4$ $\quad x = \pi/4$

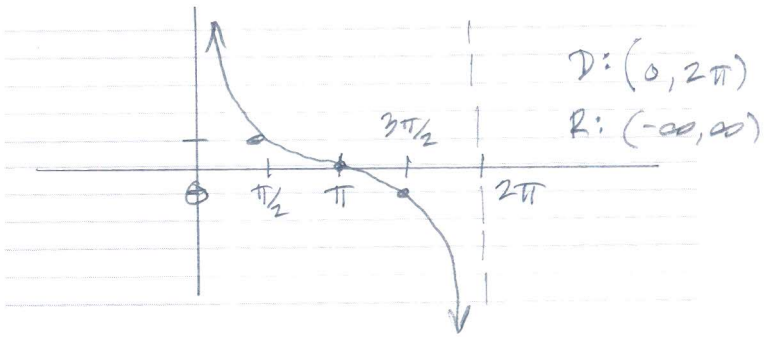


D: $(-3\pi/4, \pi/4)$
R: $(-\infty, \infty)$

2. $y = \cot\left(\frac{1}{2}x\right)$

$\frac{1}{2}x = 0$ $\quad \frac{1}{2}x = \pi$

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

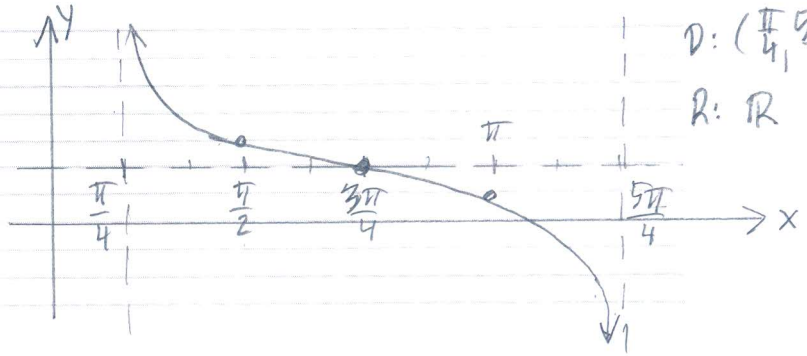


D: $(0, 2\pi)$
R: $(-\infty, \infty)$

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

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

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



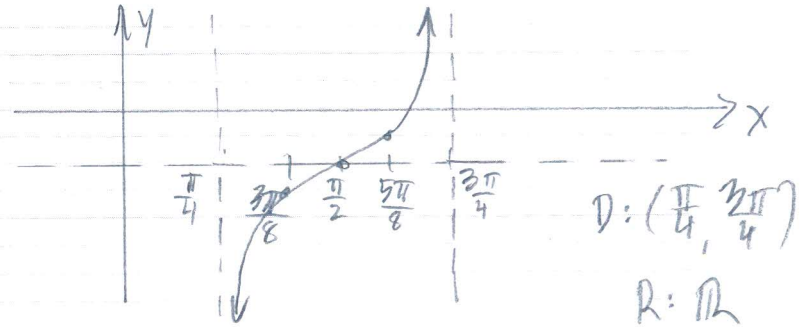
D: $(\frac{\pi}{4}, \frac{5\pi}{4})$
R: $\mathbb{R}$

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

$2x - \pi = -\frac{\pi}{2}$ $\quad 2x - \pi = \frac{\pi}{2}$

$2x = \frac{\pi}{2}$ $\quad 2x = \frac{3\pi}{2}$

$x = \frac{\pi}{4}$ $\quad x = \frac{3\pi}{4}$

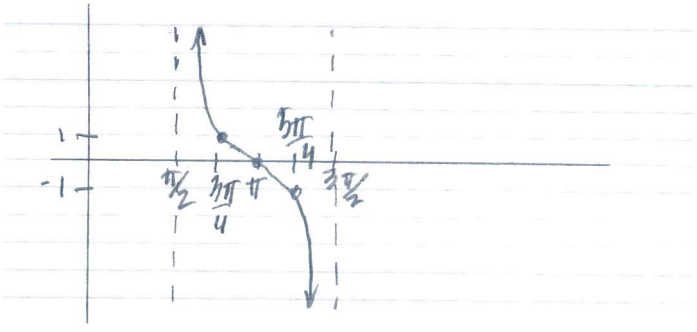


D: $(\frac{\pi}{4}, \frac{3\pi}{4})$
R: $\mathbb{R}$

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

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

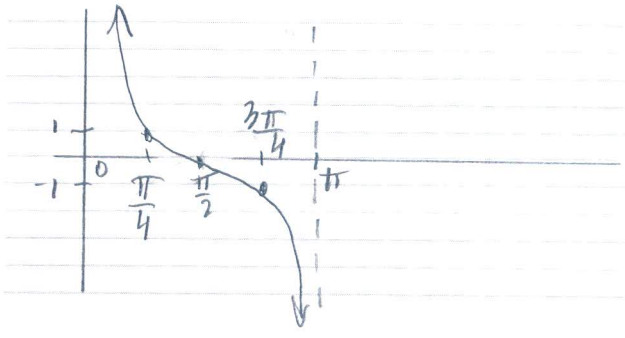
$x - \frac{\pi}{2} = \pi$ $\quad x = \frac{3\pi}{2}$



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

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

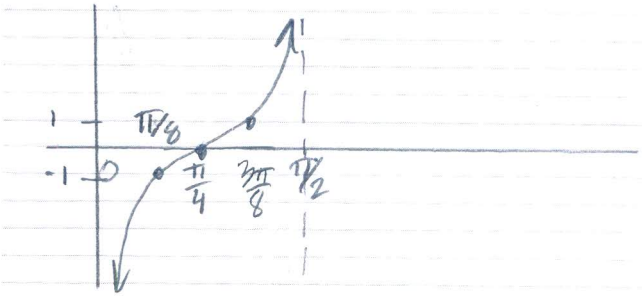
$x - \frac{\pi}{2} = \frac{\pi}{2}$ $\quad x = \pi$



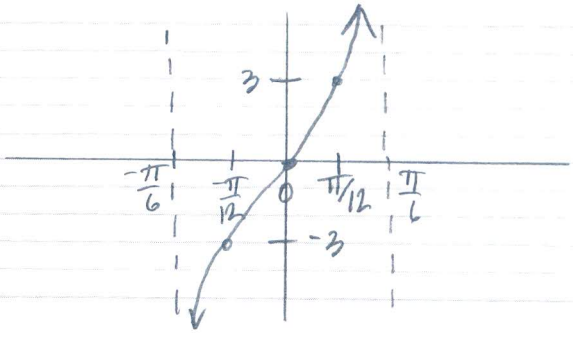
7. $y = \cot(2x)$

$2x = 0$ $\quad x = 0$

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



8. $y = 3\tan(3x)$

$3x = -\frac{\pi}{2}$ $\quad x = -\pi/6$

$3x = \frac{\pi}{2}$ $\quad x = \pi/6$