

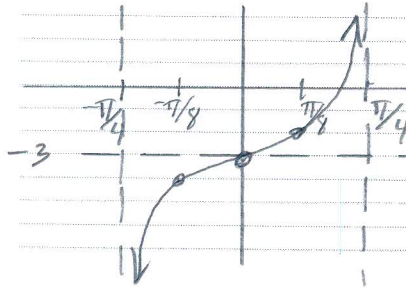
Trig Graphing WS
Tangent Graphs

Name Fuston

Graph one complete period for each function and give the domain and range (in interval notation) of that period.

1) $y = -3 + \tan 2x$

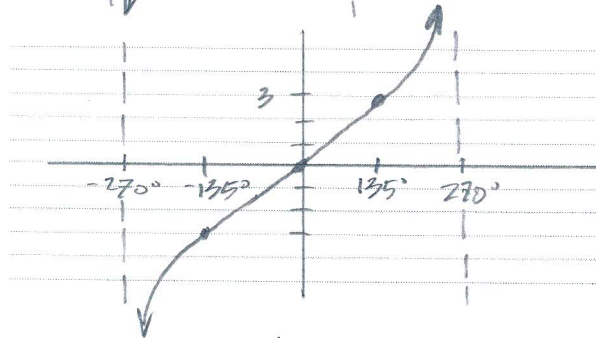
$$\begin{aligned} 2x &= -\frac{\pi}{2} & 2x &= \frac{\pi}{2} \\ x &= -\frac{\pi}{4} & x &= \frac{\pi}{4} \end{aligned}$$



period = $\frac{\pi}{2}$
dom: $(-\frac{\pi}{4}, \frac{\pi}{4})$
range: $(-\infty, \infty)$

2) $y = 3 \tan \frac{\theta}{3}$

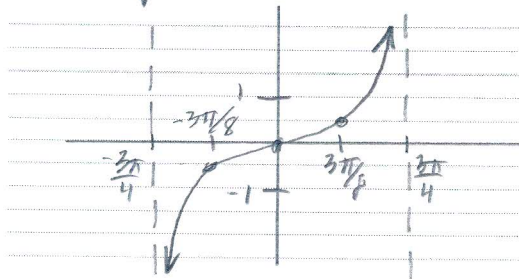
$$\begin{aligned} \frac{\theta}{3} &= -90^\circ & \frac{\theta}{3} &= 90^\circ \\ \theta &= -270^\circ & \theta &= 270^\circ \end{aligned}$$



period = 540°
dom: $(-270^\circ, 270^\circ)$
range: $(-\infty, \infty)$

3) $y = \frac{1}{2} \tan \frac{2x}{3}$

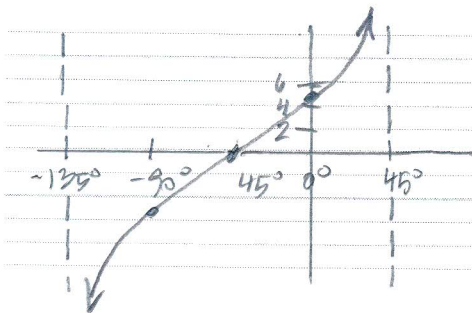
$$\begin{aligned} \frac{2x}{3} &= -\frac{\pi}{2} & \frac{2x}{3} &= \frac{\pi}{2} \\ x &= -\frac{3\pi}{4} & x &= \frac{3\pi}{4} \end{aligned}$$



period = $\frac{3\pi}{2}$
dom: $(-\frac{3\pi}{4}, \frac{3\pi}{4})$
range: $(-\infty, \infty)$

4) $y = 5 \tan(\theta + 45^\circ)$

$$\begin{aligned} \theta + 45^\circ &= -90^\circ \\ \theta &= -135^\circ \\ \theta + 45^\circ &= 90^\circ \\ \theta &= 45^\circ \end{aligned}$$

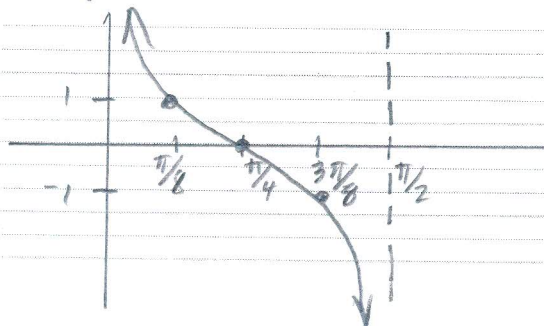


period = 180°
dom: $(-135^\circ, 45^\circ)$
range: $(-\infty, \infty)$

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

$$\begin{aligned} 2x - \frac{\pi}{2} &= -\frac{\pi}{2} \\ x &= 0 \end{aligned}$$

$$\begin{aligned} 2x - \frac{\pi}{2} &= \frac{\pi}{2} \\ x &= \frac{\pi}{2} \end{aligned}$$



period = $\frac{\pi}{2}$
dom: $(0, \frac{\pi}{2})$
range: $(-\infty, \infty)$