

Trig Graphing WS
Tangent Graphs

$$-\frac{\pi}{2} \text{ \& } \frac{\pi}{2}$$

$$-90^\circ \text{ \& } 90^\circ$$

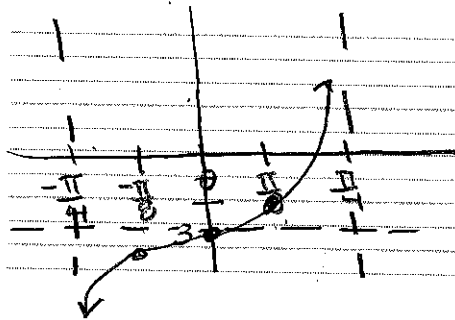
Name Key

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

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

$y = \tan 2x - 3$

$\rightarrow 2x = -\frac{\pi}{2} \quad 2x = \frac{\pi}{2}$
 $x = -\frac{\pi}{4} \quad x = \frac{\pi}{4}$



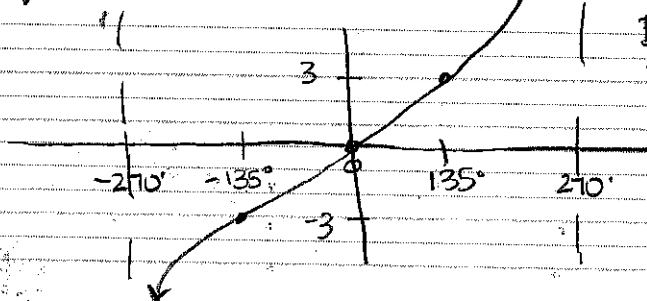
Domain: $(-\pi/4, \pi/4)$

Range: $(-\infty, \infty)$

P: $\frac{\pi}{2}$

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

$\frac{\theta}{3} = -90^\circ \quad \frac{\theta}{3} = 90^\circ$
 $\theta = -270^\circ \quad \theta = 270^\circ$



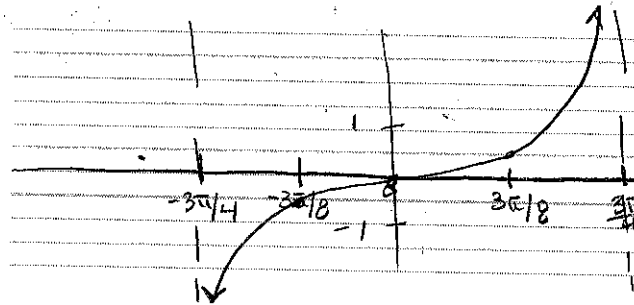
Domain: $(-270^\circ, 270^\circ)$

Range: $(-\infty, \infty)$

P: 540°

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

$\frac{2x}{3} = -\frac{\pi}{2} \quad \frac{2x}{3} = \frac{\pi}{2}$
 $x = -\frac{3\pi}{4} \quad x = \frac{3\pi}{4}$



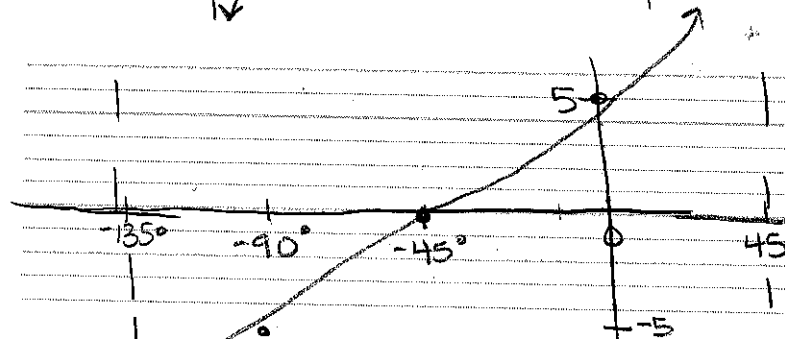
D: $(-\frac{3\pi}{4}, \frac{3\pi}{4})$

R: $(-\infty, \infty)$

P: $3\pi/2$

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

$\theta + 45 = -90 \quad \theta + 45 = 90$
 $\theta = -135^\circ \quad \theta = 45^\circ$



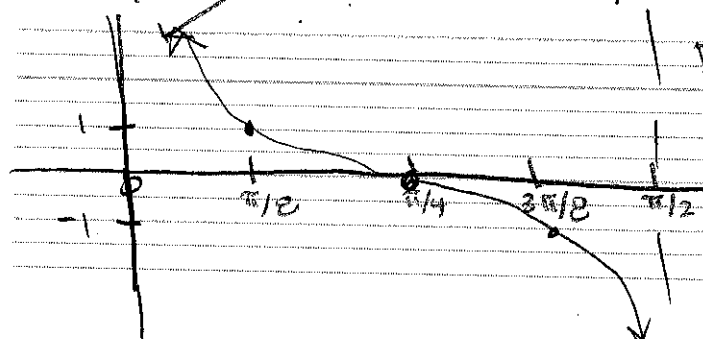
D: $(-135^\circ, 45^\circ)$

R: $(-\infty, \infty)$

P: 180°

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

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



D: $(0, \pi/2)$

R: $(-\infty, \infty)$

P: $\frac{\pi}{2}$