

5.3 Worksheet

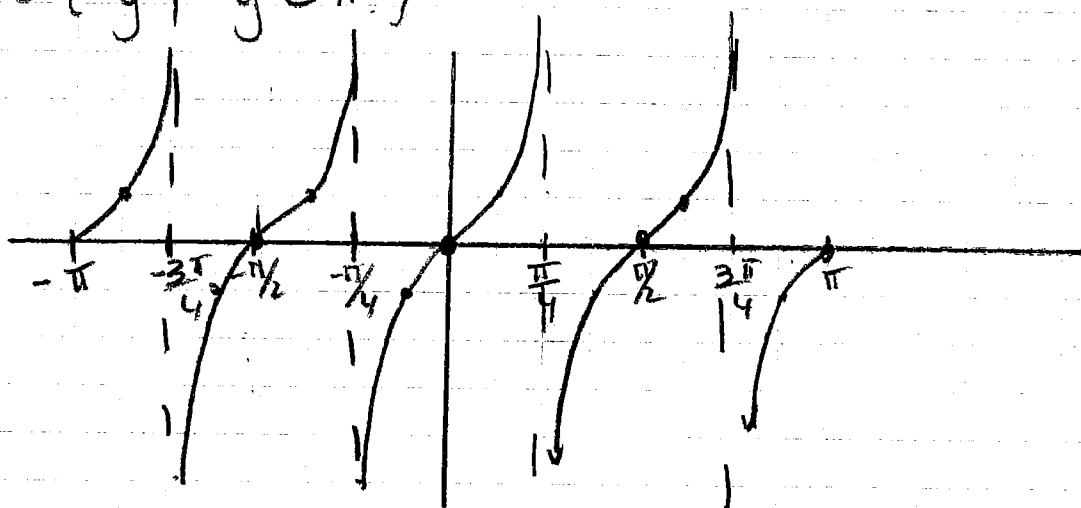
#1 a) $y = \tan 2\theta \quad -\pi < \theta < \pi$

period = $\frac{\pi}{2}$ 1st asymptote $\frac{1}{2}(\text{period}) = \frac{1}{2}\left(\frac{\pi}{2}\right) = \frac{\pi}{4}$

asymptote = $\frac{\pi}{4} + \frac{\pi}{2}n \quad n \in \mathbb{I}$

Domain $\{\theta : \theta \neq \frac{\pi}{4} + \frac{\pi}{2}n \quad n \in \mathbb{I} \quad \theta \in \mathbb{R}\}$

Range $\{y \mid y \in \mathbb{R}\}$

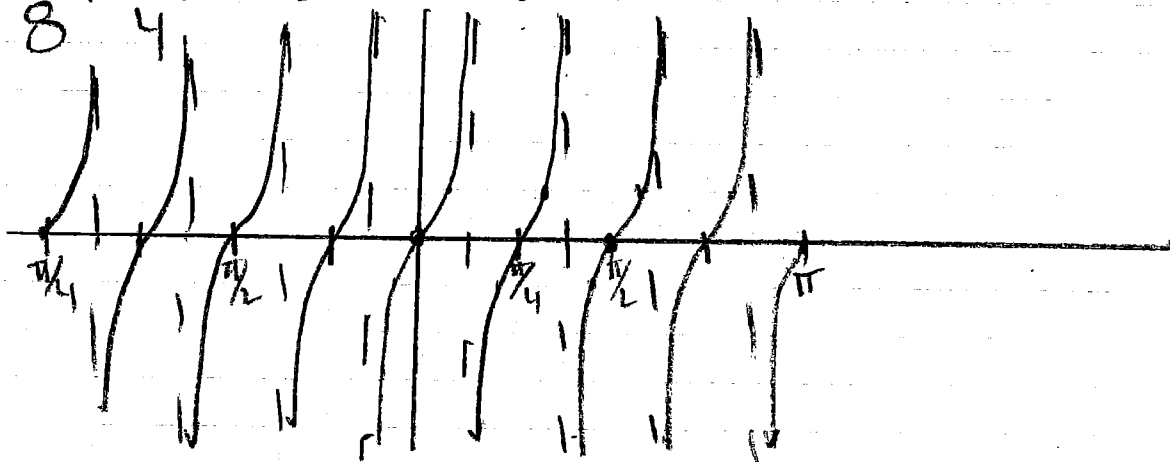


b) $y = \tan 4\theta$

period = $\frac{\pi}{4}$

Domain $\{\theta : \theta \neq \frac{\pi}{8} + \frac{\pi}{4}n \quad n \in \mathbb{I} \quad \theta \in \mathbb{R}\}$

asym = $\frac{\pi}{8} + \frac{\pi}{4}n \quad n \in \mathbb{I}$ Range $\{y \mid y \in \mathbb{R}\}$

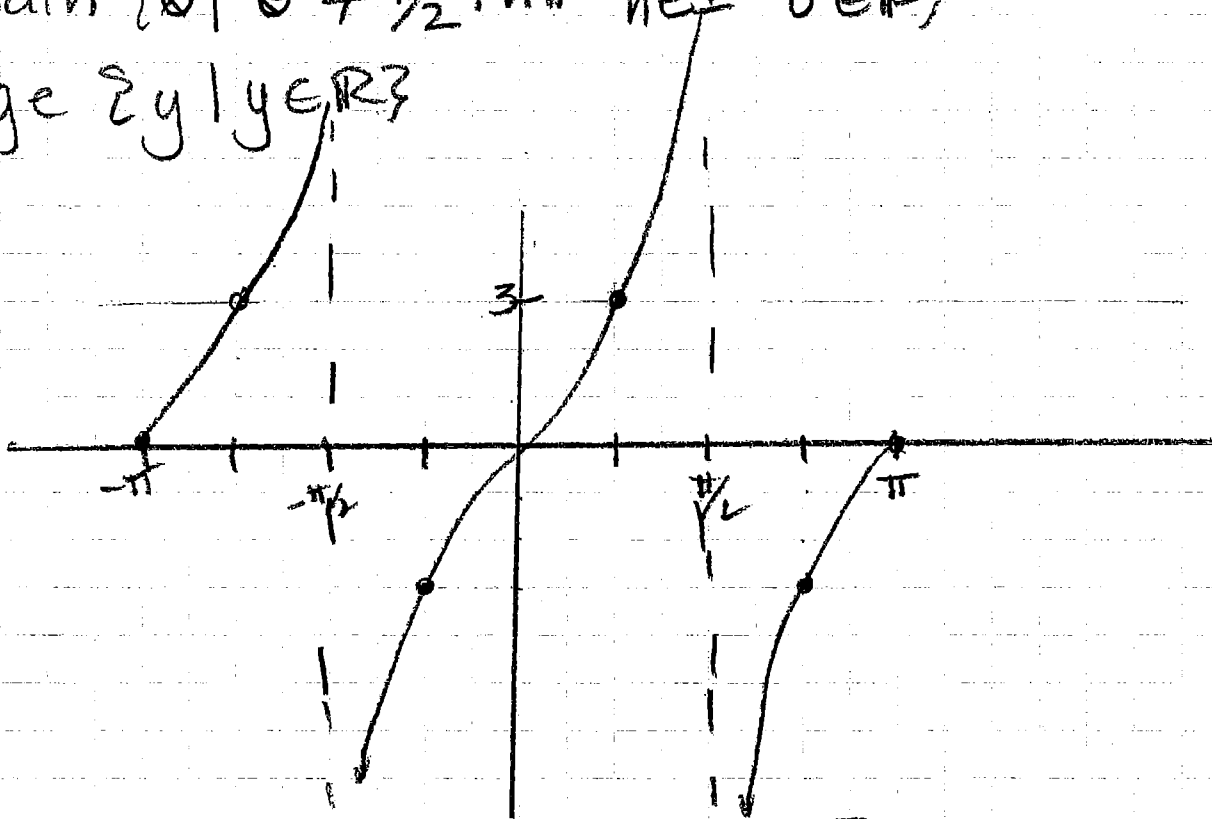


c) $y = 3 \tan \theta \quad -\pi < \theta < \pi$

period = π asymptotes = $\frac{\pi}{2} + n\pi \quad n \in \mathbb{I}$

domain $\{\theta \mid \theta \neq \frac{\pi}{2} + n\pi \quad n \in \mathbb{I} \quad \theta \in \mathbb{R}\}$

Range $\{y \mid y \in \mathbb{R}\}$



d) $y = \tan(\theta - \frac{\pi}{2}) \quad -\pi < \theta < \pi$

period = π asymptotes = $\frac{\pi}{2} + \frac{\pi}{2} + n\pi \quad n \in \mathbb{I}$
 $= \pi + n\pi \quad n \in \mathbb{I}$

domain $\{\theta \mid \theta \neq n\pi \quad n \in \mathbb{I} \quad \theta \in \mathbb{R}\}$

Range $\{y \mid y \in \mathbb{R}\}$

