

Day 1 GRAPHING

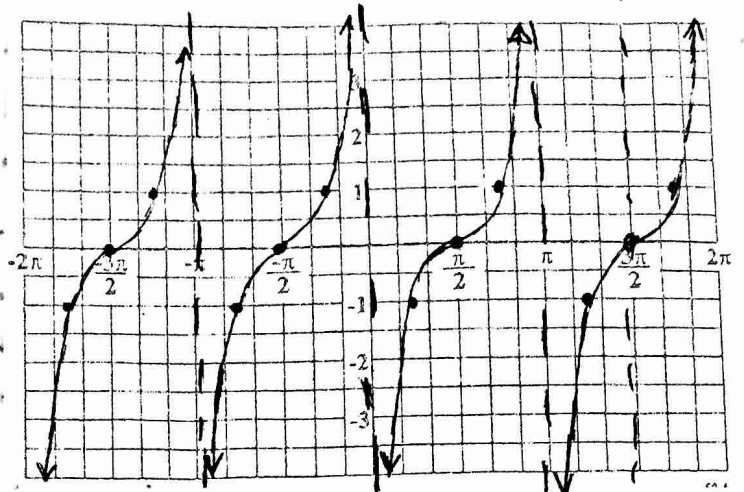
1) $y = \tan\left(x + \frac{\pi}{2}\right)$

Domain $x \in \mathbb{R} \quad x \neq n\pi$

Range $(-\infty, \infty)$

Equation of asymptotes $x = n\pi \quad n \in \mathbb{Z}$

Two specific asymptotes $x = \pi$
 $x = 2\pi$



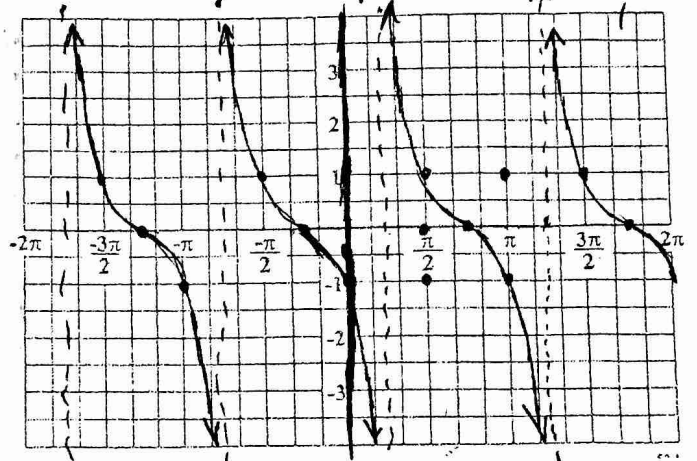
2) $y = \cot\left(\theta - \frac{\pi}{4}\right)$

Domain $x \in \mathbb{R} \quad x \neq \frac{\pi}{4} + n\pi \quad n \in \mathbb{Z}$

Range $(-\infty, \infty)$

Equation of asymptotes $x = \frac{\pi}{4} + n\pi$

Two specific asymptotes $x = \frac{\pi}{4}$
 $x = \frac{5\pi}{4}$



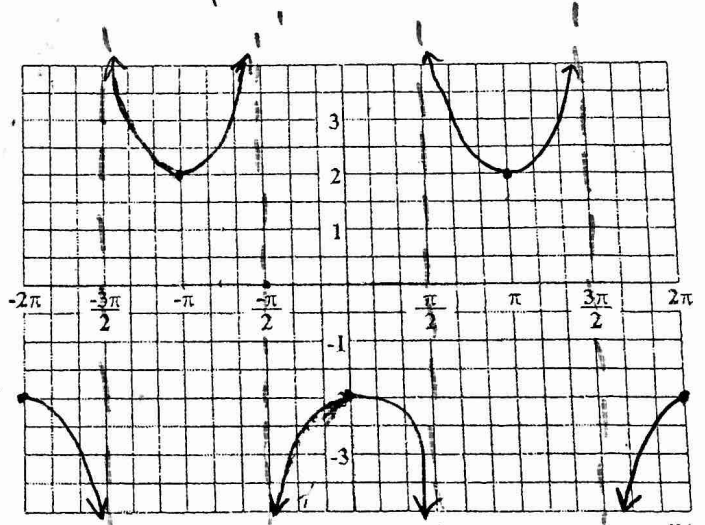
3) $y = 2 \sec(\theta + \pi)$

Domain $x \in \mathbb{R} \quad x \neq \frac{\pi}{2} + n\pi \quad n \in \mathbb{Z}$

Range $(-\infty, -2] \cup [2, \infty)$

Equation of asymptotes $x = \frac{\pi}{2} + n\pi \quad n \in \mathbb{Z}$

Two specific asymptotes $x = \frac{\pi}{2}$ $x = \frac{3\pi}{2}$



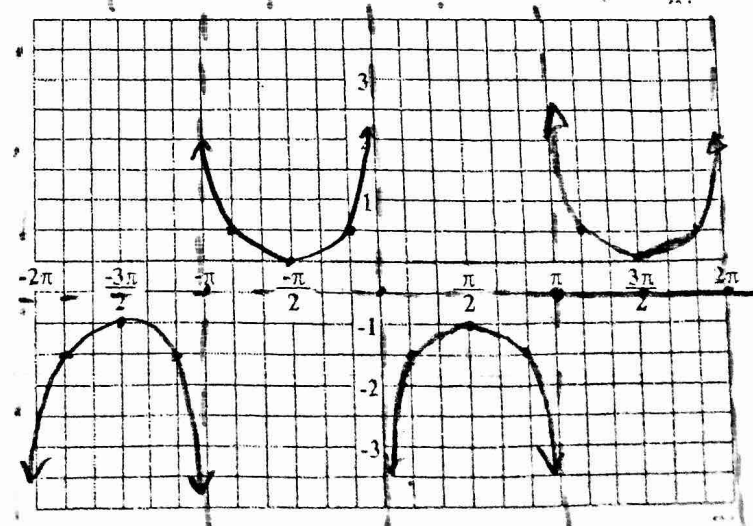
4) $y = \frac{1}{2} \csc(x - \pi) - 1$

Domain $x \in \mathbb{R} \quad x \neq n\pi \quad n \in \mathbb{Z}$

Range $(-\infty, -\frac{1}{2}] \cup [0, \infty)$

Equation of asymptotes $x = n\pi \quad n \in \mathbb{Z}$

Two specific asymptotes $x = \pi$ $x = 2\pi$



*helpsto draw as sine or cosine

Reflection
 V Shrink
 H Shift

5) $y = -3 \sec\left(x + \frac{\pi}{6}\right) + 1$

Domain $x \in \mathbb{R} \quad x \neq \frac{\pi}{3} + n\pi \quad n \in \mathbb{Z}$

Range $(-\infty, -2] \cup [3, \infty)$

Equation of asymptotes $x = \frac{2\pi}{3} + n\pi$

Two specific asymptotes $x = \frac{2\pi}{3}, x = \frac{5\pi}{3}$

6) $y = \csc\left(3\theta + \frac{\pi}{2}\right) + 3$
 H Shrink
 V Shift
 H Shift
 Scale $\frac{\pi}{2} \cdot \frac{1}{3} = \frac{\pi}{6}$

Domain $x \in \mathbb{R} \quad x \neq \frac{\pi}{6} + \frac{\pi}{3}n \quad n \in \mathbb{Z}$

Range $(-\infty, 2] \cup [4, \infty)$

Equation of asymptotes $x = \frac{\pi}{6} + \frac{\pi}{3}n$

Two specific asymptotes $x = \frac{\pi}{6}, x = \frac{\pi}{2}$

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

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

Range $(-\infty, \infty)$

Equation of asymptotes $x = \frac{\pi}{4} + \frac{n\pi}{2}$

Two specific asymptotes _____

8) $y = -\cot\left(\frac{1}{2}\theta + \pi\right) - 2$
 reflect
 stretch by 2
 H Shift
 V Shift

Domain $x \in \mathbb{R} \quad x \neq \frac{\pi}{2} + 2\pi n \quad n \in \mathbb{Z}$

Range $(-\infty, \infty)$

Equation of asymptotes $x = \frac{\pi}{2} + 2\pi n$

Two specific asymptotes $x = \frac{\pi}{2}, x = \frac{3\pi}{2}$

