5.4 part 1 WARM-UP NAME: KEY PER:

Factor, then state the period and horizontal shift.

A. $y = \cos\left(\frac{1}{4}x - \pi\right)$ $\frac{2\pi}{k}$

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

Per $= \frac{2\pi}{\frac{1}{4}} = 2\pi \cdot \frac{4}{1}$

Per $= 8\pi$

h.s. $= 4\pi$ move right

B. $y = \cot(2x + 3\pi)$ $\frac{\pi}{k}$

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

Per $= \frac{\pi}{2}$

h.s. $= \frac{-3\pi}{2}$ left

C. $y = \csc\left(\frac{x}{3} + \frac{\pi}{6}\right)$

$y = \csc\frac{1}{3}\left(x + \frac{\pi}{2}\right)$

Per $= \frac{2\pi}{\frac{1}{3}}$ $\frac{2\pi}{k}$

Per $= 6\pi$

h.s. $= \frac{-\pi}{2}$ left

D. $y = \tan\left(3x - \frac{\pi}{2}\right)$ $\frac{\pi}{k}$

$y = \tan 3\left(x - \frac{\pi}{6}\right)$

Per $= \frac{\pi}{3}$

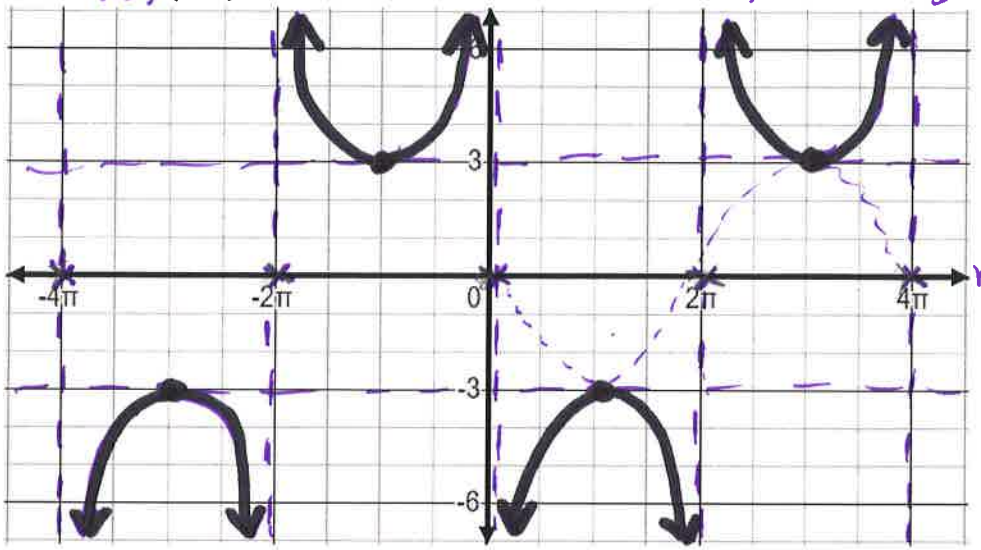
h.s. $= \frac{\pi}{6}$ right

Identify the period, then sketch a graph for $-4\pi \le x \le 4\pi$

E. $y = -3\csc\left(\frac{1}{2}x\right)$ flip, $A = 3$

Per $= \frac{2\pi}{\frac{1}{2}} = 4\pi$

- use key points for sine graph



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

Per $= \frac{\pi}{\frac{1}{2}} = 2\pi$

- decreasing
- no h.s. so asymptote at (0,0)