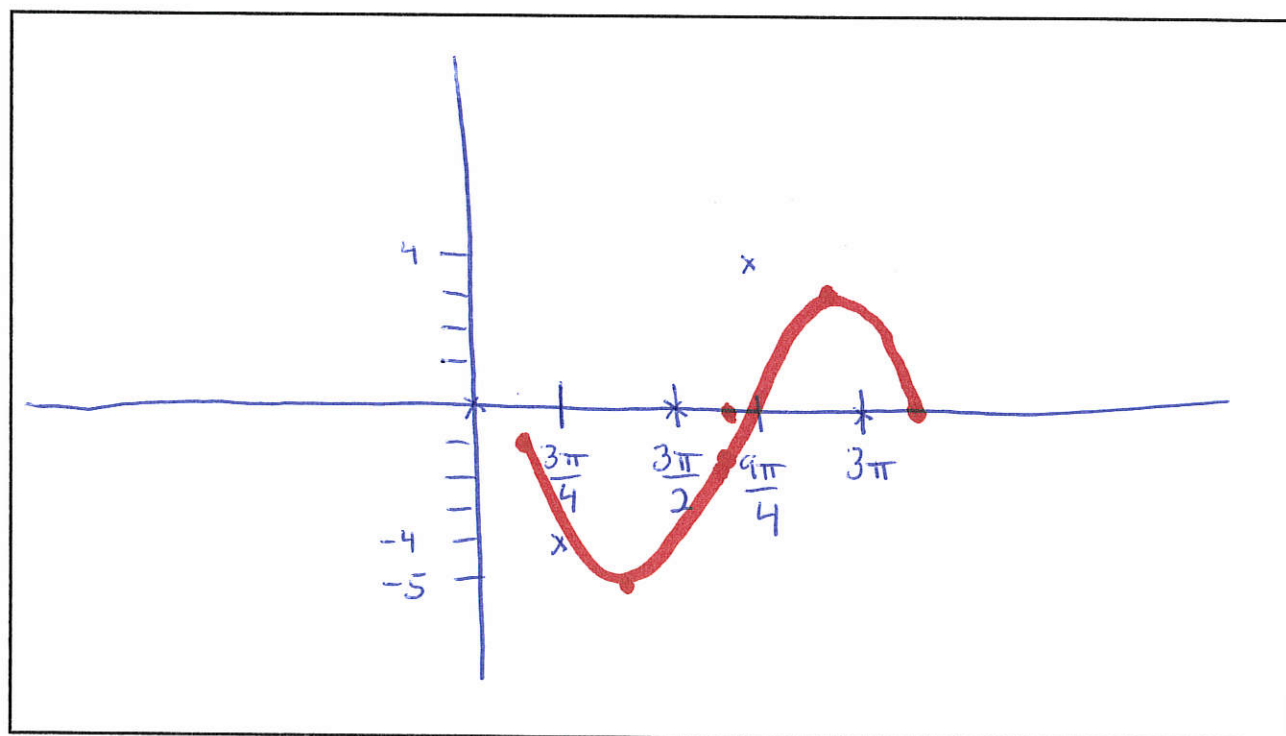Graph 1 period of the function

1. $y = -4\sin\left(\dfrac{2}{3}x - \dfrac{\pi}{3}\right) - 1$

$\text{period} = \dfrac{2\pi}{\left(\frac{2}{3}\right)} = 3\pi$

$\text{P.S}: \dfrac{\frac{\pi}{3}}{\frac{2}{3}} = \dfrac{3\pi}{6} = \dfrac{\pi}{2}$
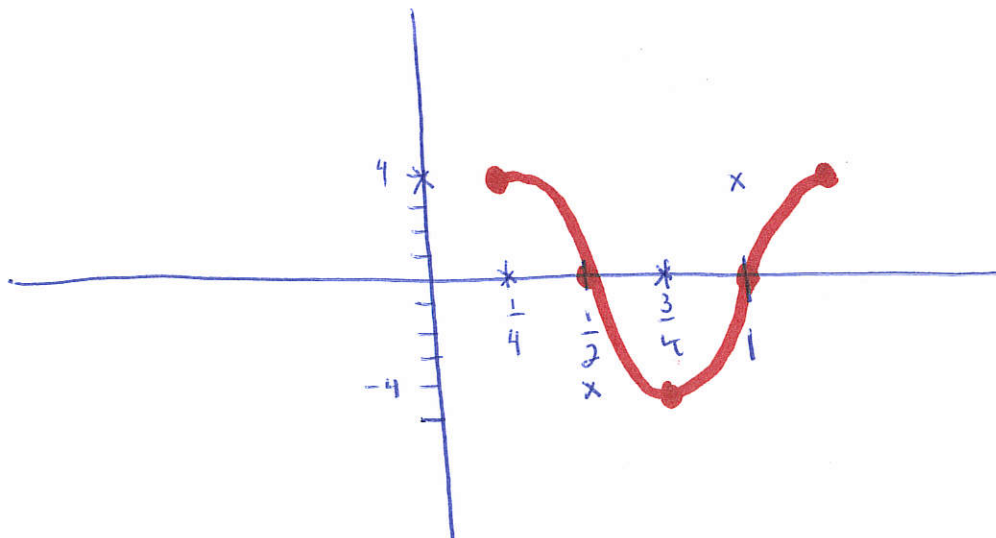
Graph 1 period of the function

$$2.\ y = 4\cos\left(2\pi x - \frac{\pi}{2}\right)$$
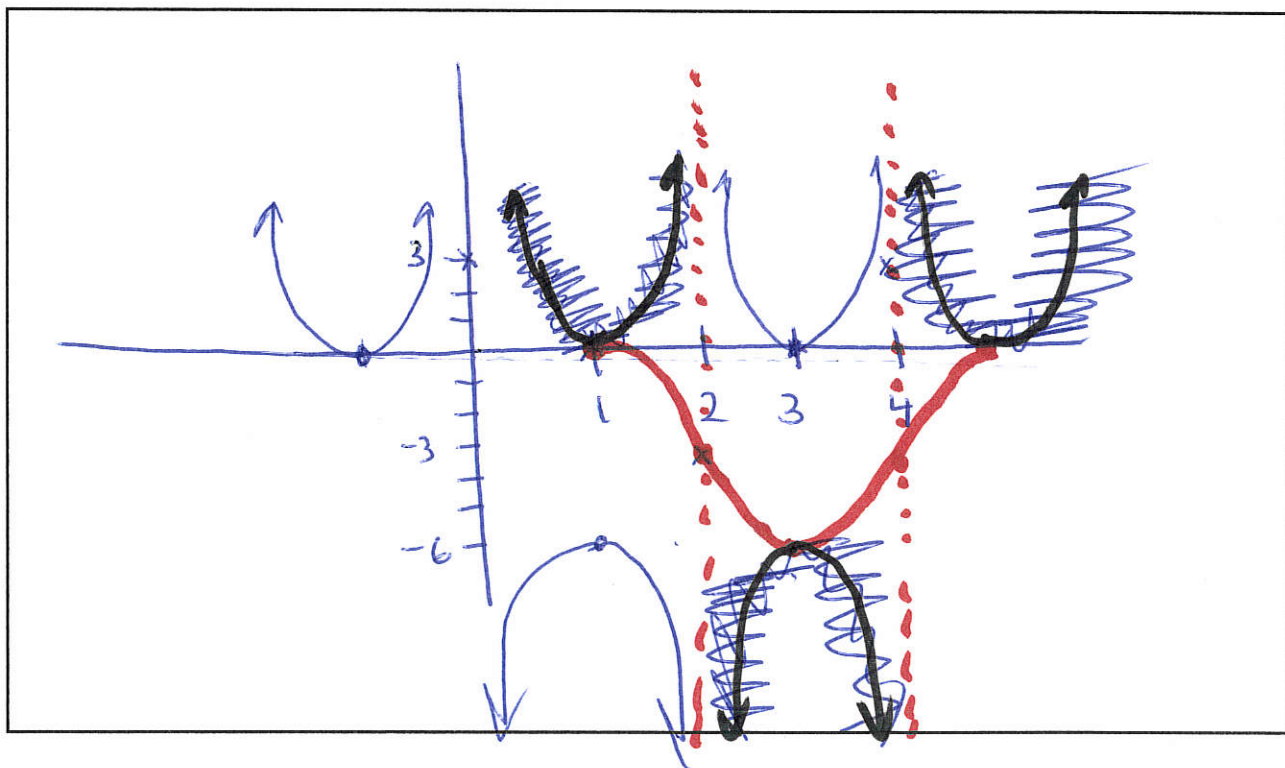
Period = 1   p.s. $\dfrac{\left(\frac{\pi}{2}\right)}{2\pi} = \dfrac{1}{4}$

Graph 1 period of the function

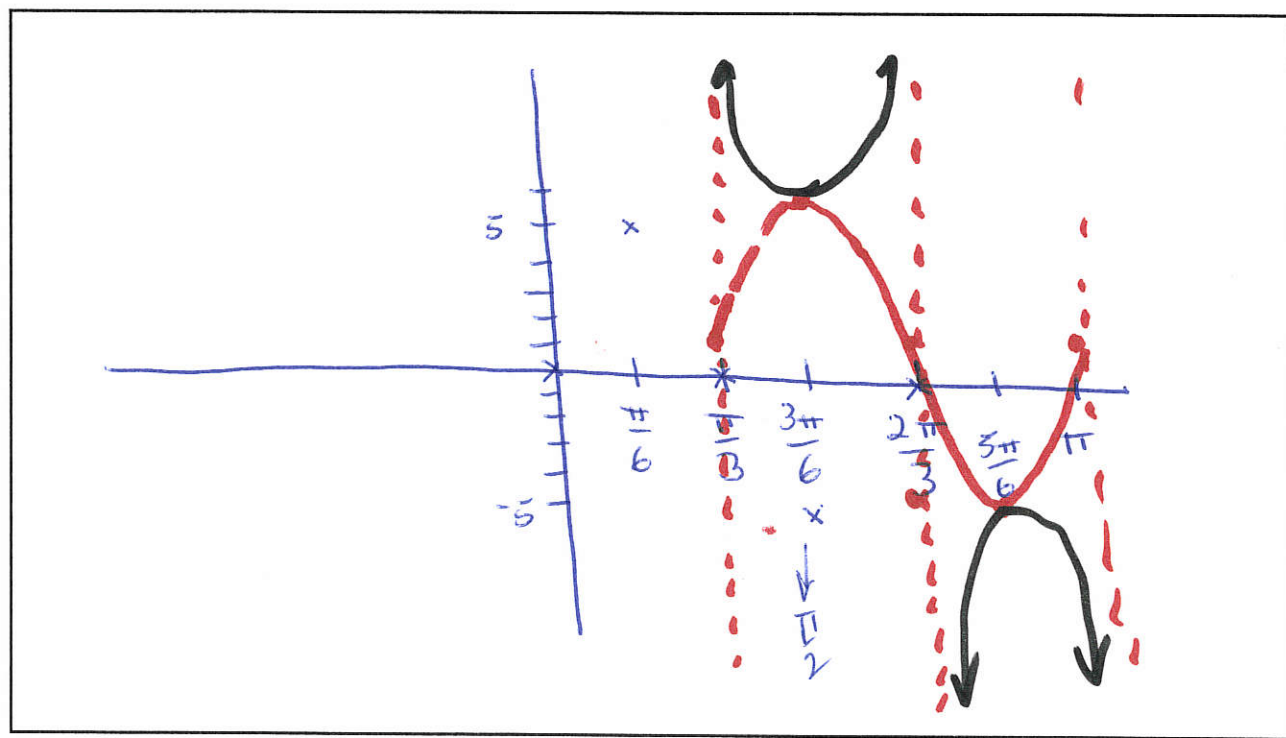3. $y = 3\sec\left(\dfrac{\pi x}{2} + \dfrac{\pi}{2}\right) - 3$

Period $= \dfrac{2\pi}{\left(\frac{\pi}{2}\right)} = 4$ 　　　 phase: $\dfrac{\frac{\pi}{2}}{\frac{\pi}{2}} = 1$ Left

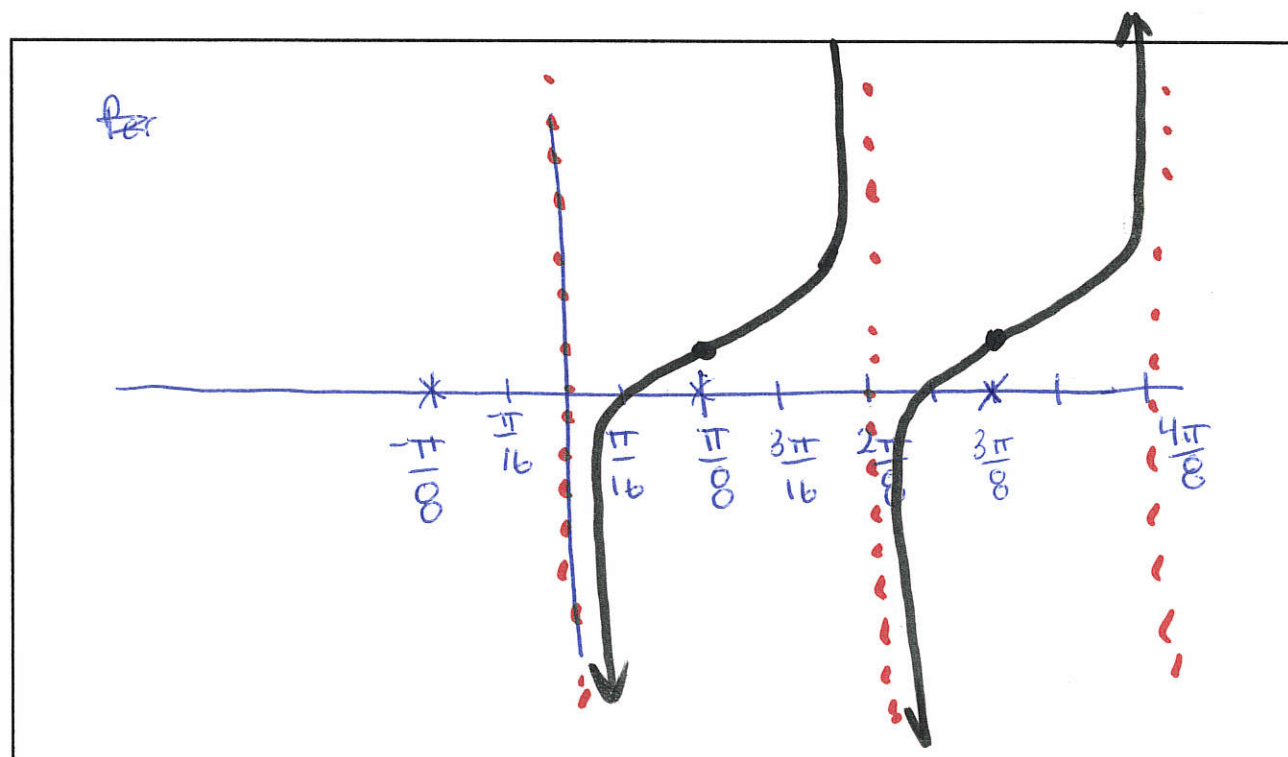Graph 1 period of the function

4. $y = 5\csc(3x - \pi) + 1$

period $= \dfrac{2\pi}{3}$ P. S $\dfrac{\pi}{3}$

Graph 1 period of the function

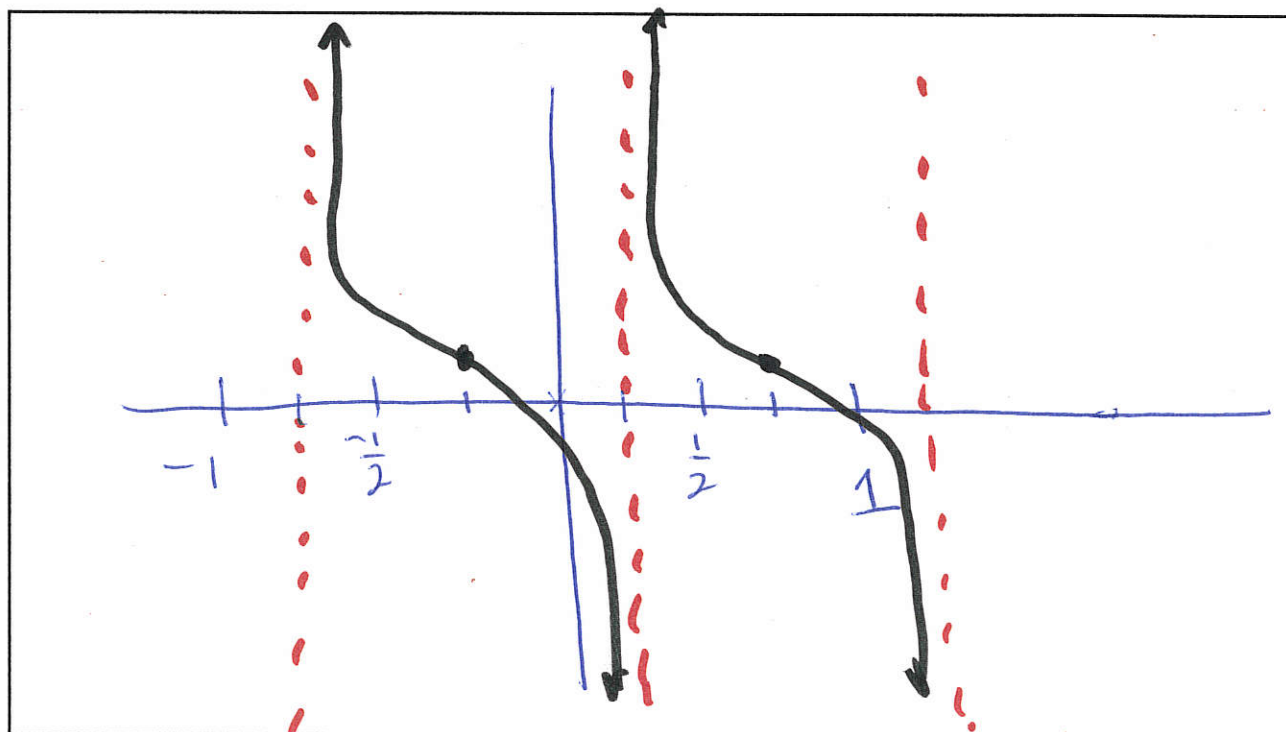$$5.\ y = \tan\left(4x - \frac{\pi}{2}\right) + 1$$

Period = $\frac{\pi}{4}$ Amp: 1

P.S $\pi/8$

Graph 1 period of the function

$$6. \ y = \cot \pi \left(x - \frac{1}{4} \right) + 1$$

period 1   P.5 $\frac{1}{4}$

Construct a sinusoid with the given amplitude and period that goes through the given point.

- Amp: 4, period $\dfrac{\pi}{5}$ point (0, 0)

$\dfrac{2\pi}{\left(\dfrac{\pi}{5}\right)}$

$y = 4 \sin 10x$

$y = 4 \cos 10\left(x - \dfrac{\pi}{20}\right)$

Construct a sinusoid with the given amplitude and period that goes through the given point.

- Amp: +3, period 6   point (3, 0)

$y = +3 \sin \dfrac{\pi}{3}(x - 3)$

$y = -3\cos \dfrac{\pi}{3}\left(x - 3 + \dfrac{\pi}{2}\right)$

$y = +3 \cos \dfrac{\pi}{3}\left(x - 3 - \dfrac{3}{2}\right)$

$= 3 \cos \dfrac{\pi}{3}\left(x - \dfrac{9}{2}\right)$

February 12th, 2016, high tide occurred at ~~4:02~~ pm. At that time the water was 2.5 meters deep. Low tide occurred at ~~7:56~~ a.m, at which time the water was only 1.2 meters deep. Assume that the depth of the water is a sinusoidal function of time with a period of about 12 hrs

a) Model the depth, D, as a sinusoidal function of time, t, algebraically then graph the function.

b) At what time did the first low tide occur?

c) What was the approximate depth of the water at 6:00 am and at 3:00 pm?

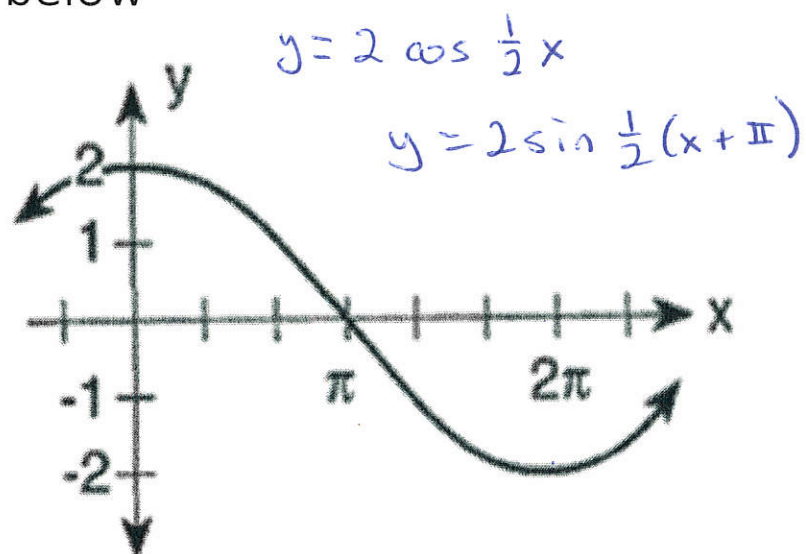d) What was the first time on this day when the water was 1 meter deep?

(16, 2.5

(16.25, 2.5)

a) $y = .65 \cos \frac{\pi}{6}(x - 16.25) + 1.85$

b) $10.25 \Rightarrow 10:15 am$

c) $6am \Rightarrow 2.25m \qquad 3pm \Rightarrow 2.37m$

d) $1.7 \qquad 1:42 am$

Determine a sine and a cosine equation for the graph below

$y = 2 \cos \frac{1}{2}x$

$y = 2 \sin \frac{1}{2}(x + \pi)$

Determine a sine and a cosine equation for the graph below

$y = 7 \cos \frac{1}{2}(x - \pi) + 1$

$y = 7 \sin \frac{1}{2}(x) + 1$
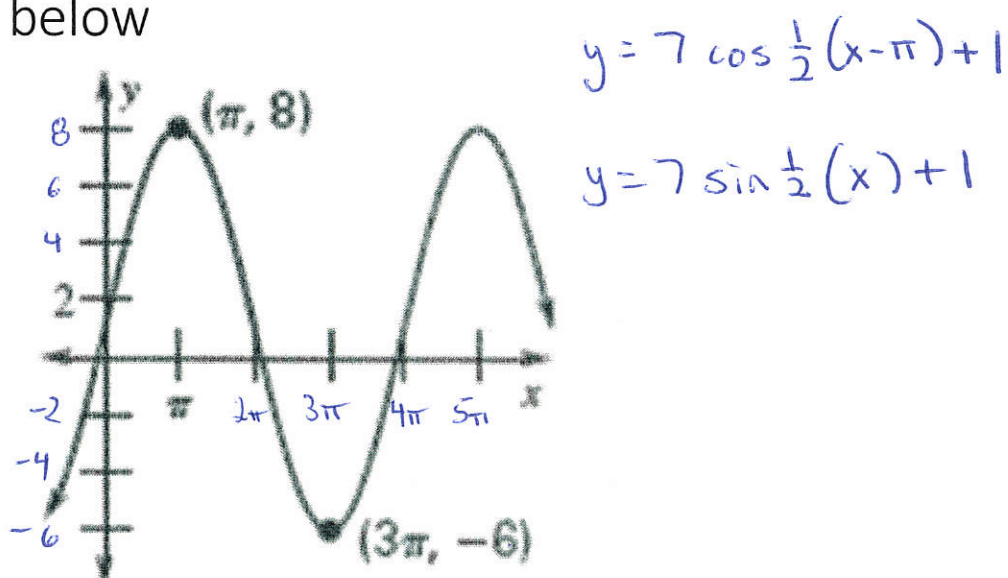
Determine a tangent equation for the graph below
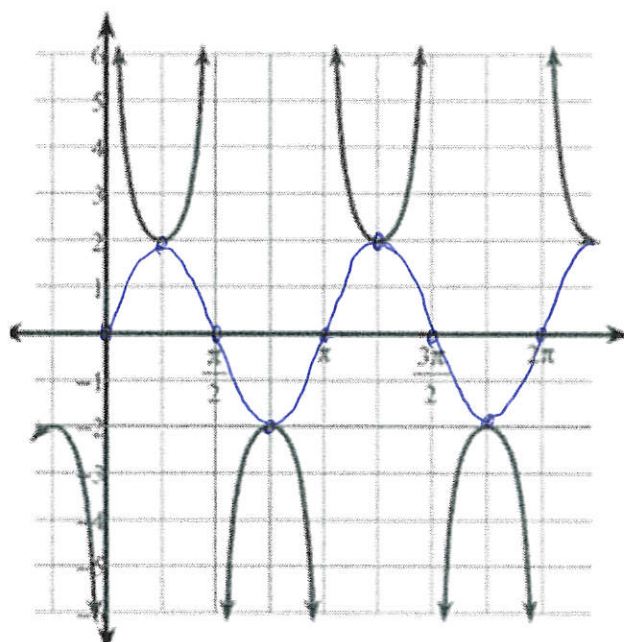

$y = \tan \frac{1}{3}x$

$period = \frac{6\pi}{2} = 3\pi$
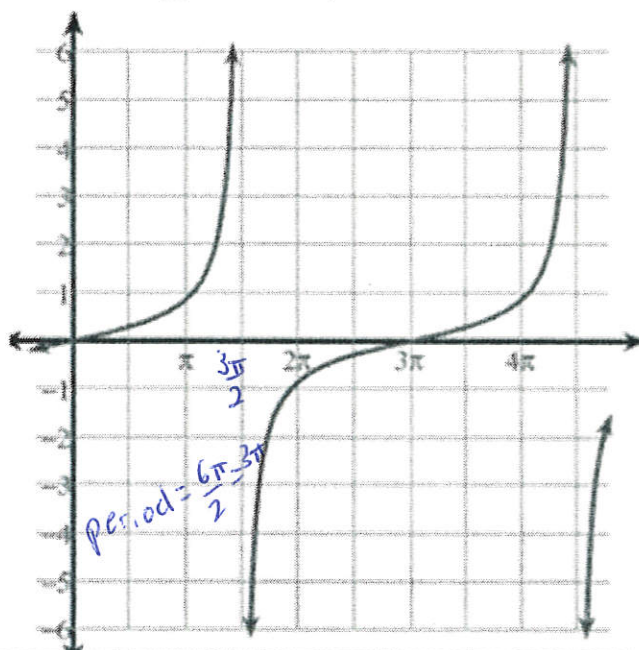
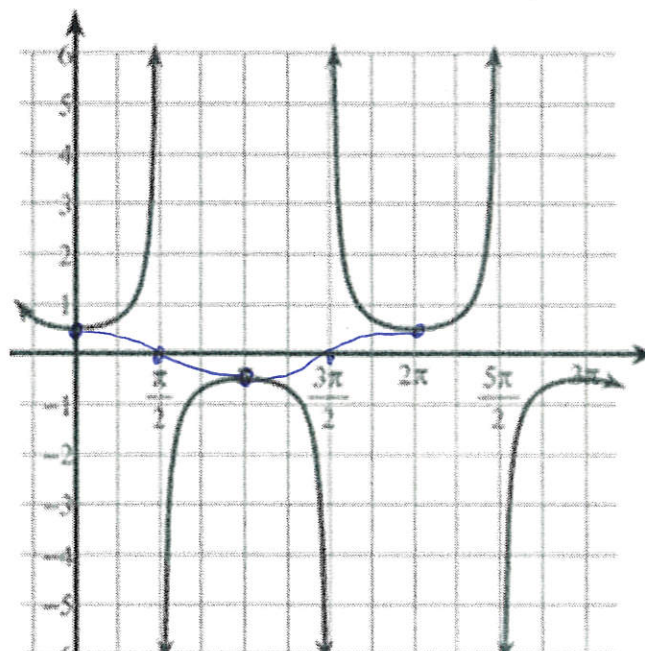Determine a cotangent equation for the graph below
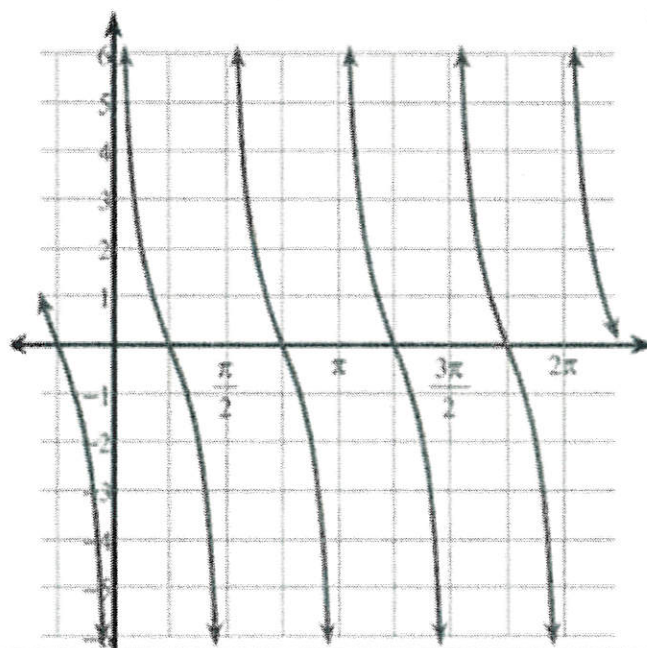
$y = 3\cot 2x$

Write a cosecant equation for the periodic function.

$$y = 2 \csc 2x$$

Write a cosecant equation for the periodic function.

$$y = \frac{1}{2} \sec x$$