

Graph 1 period of the function

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

Graph 1 period of the function

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

Graph 1 period of the function

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

Graph 1 period of the function

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

Graph 2 periods of the function

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

Graph 2 periods of the function

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

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

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

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

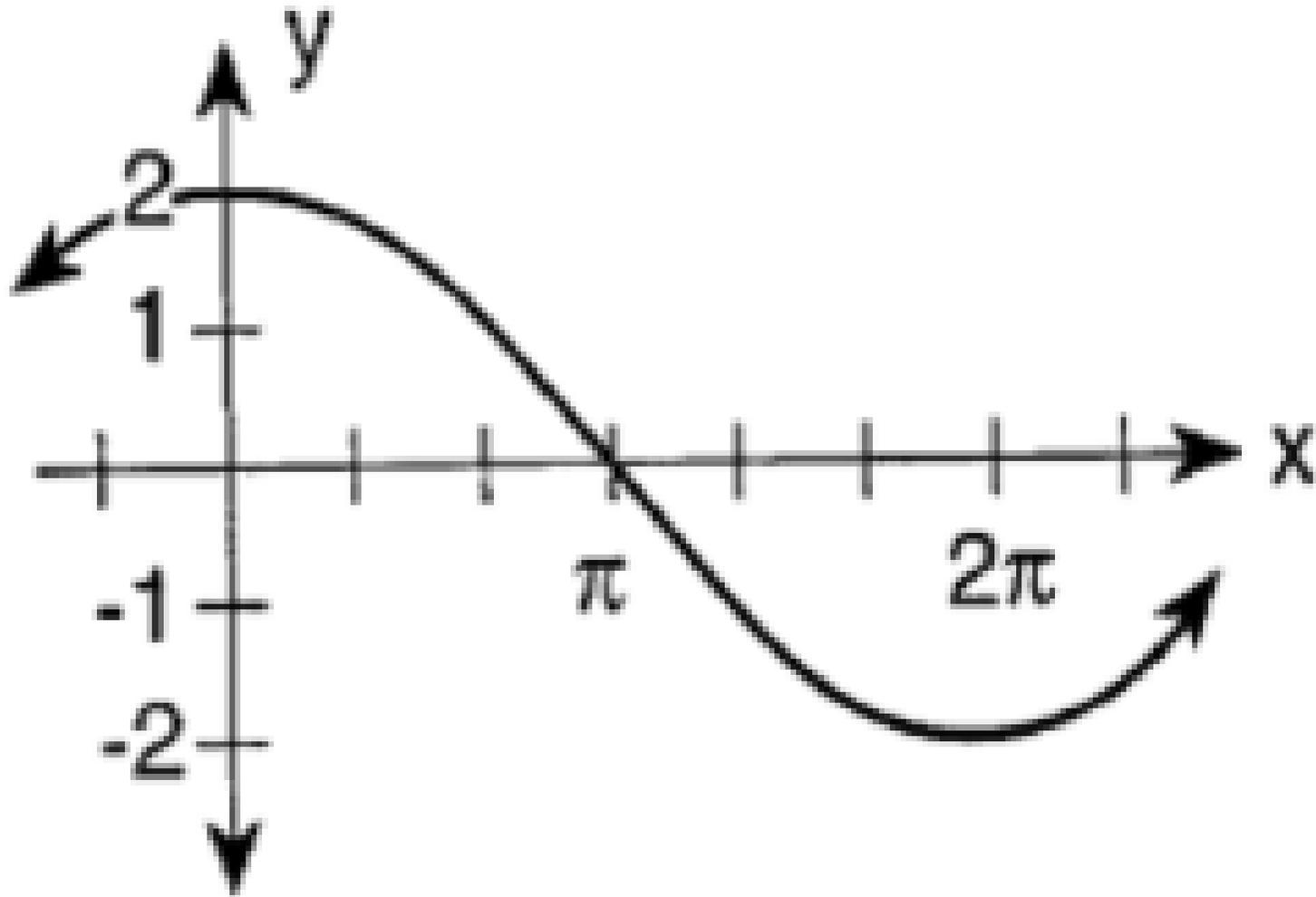
- Amp: 3, period 6 point (3, 0)

February 12<sup>th</sup>, 2016, high tide occurred at 4:15 pm. At that time the water was 2.5 meters deep. Low tide occurred at 7:45 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

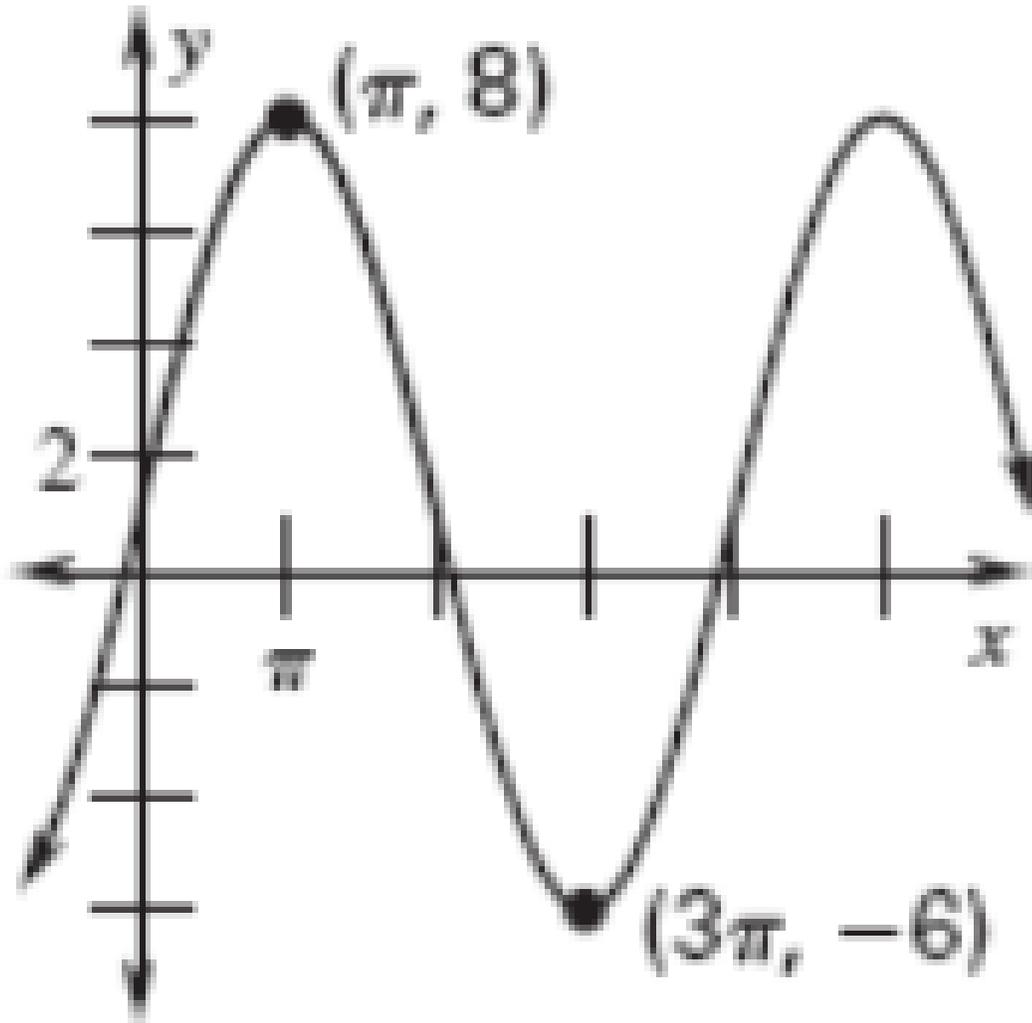
- a) Model the depth,  $D$ , as a sinusoidal function of time,  $t$ , algebraically then graph the function.
- b) At what time did the first low tide occur?
- c) What was the approximate depth of the water at 6:00 am and at 3:00 pm?
- d) What was the first time on this day when the water was 2 meter deep?



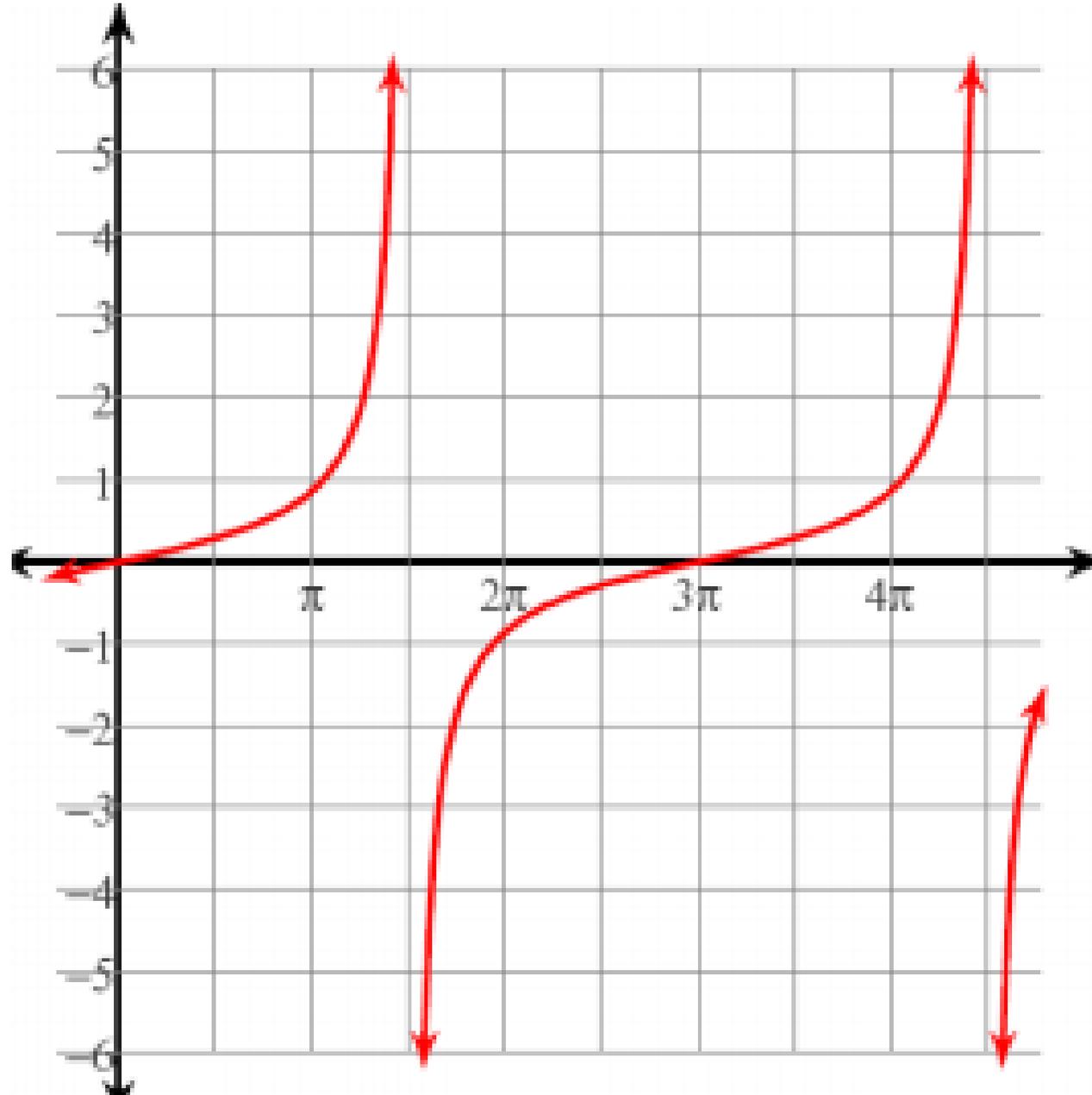
Determine a sine and a cosine equation for the graph below



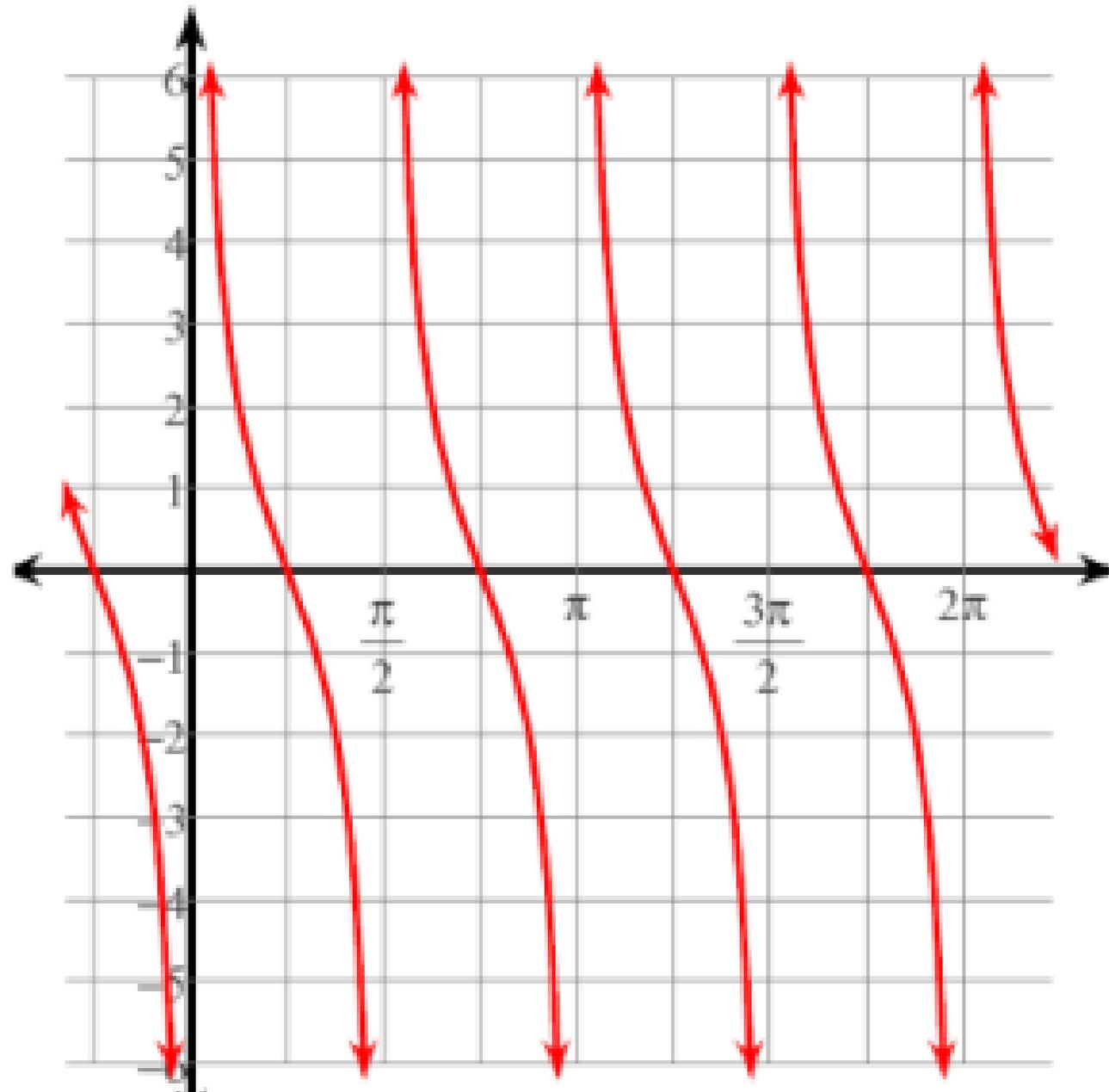
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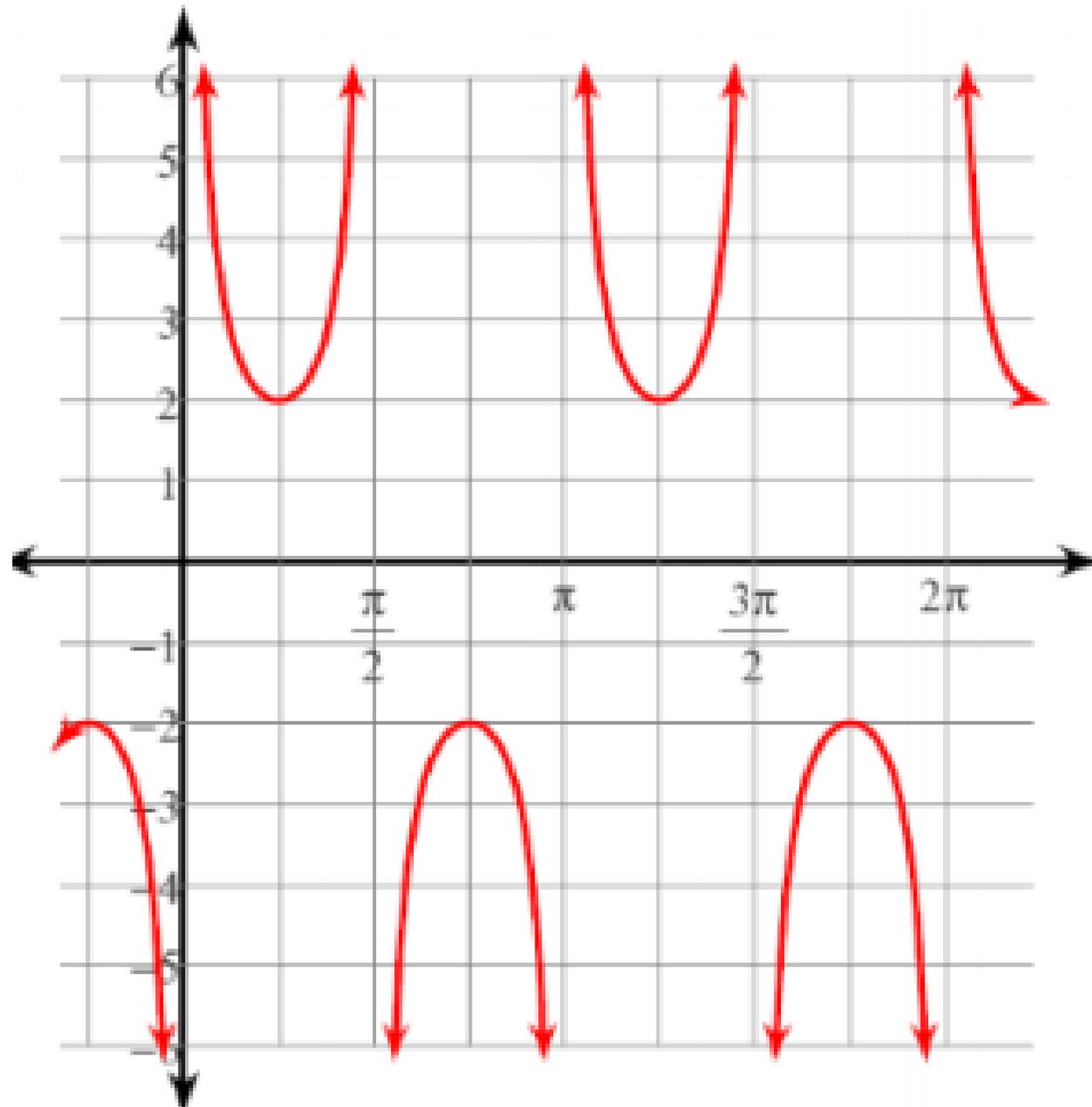
Determine a tangent equation for the graph below



Determine a cotangent equation for the graph below



Write a cosecant equation for the periodic function.



Write a cosecant equation for the periodic function.

