

I. Fill in the chart for each function. DO NOT GRAPH. Remember to factor first when needed.

*Must factor*

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

Amplitude: <u>2</u>
Flip? <u>no</u>
Vertical Shift: <u>-3</u>
Period: $P = \frac{2\pi}{\frac{1}{2}} = \boxed{2\pi}$
Phase Shift: <u>0</u>

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

Amplitude:
Flip?
Vertical Shift:
Period:
Phase Shift:

3.  $y = -5 \tan(3x + \pi)$

*Must factor*

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

Amplitude: <u>5</u>
Flip? <u>yes</u>
Vertical Shift: <u>0</u>
Period: $P = \frac{\pi}{3}$
Phase Shift: <u><math>-\frac{\pi}{3}</math></u>

II. Graph each function, over one period, showing the vertical asymptotes.

TW  
C:U C:U  
TU

4.  $y = \tan x + 2$

5.  $y = 2 \cot x - 3$

A: 2  
F: NO  
VS: -3  
P:  $\pi$   
PS: 0

6.  $y = -3 \tan\left(\frac{1}{2}x\right) + 1$

A: 3  
F: yes  
VS: +1  
P:  $\frac{\pi}{\frac{1}{2}} = \boxed{2\pi}$   
PS: 0

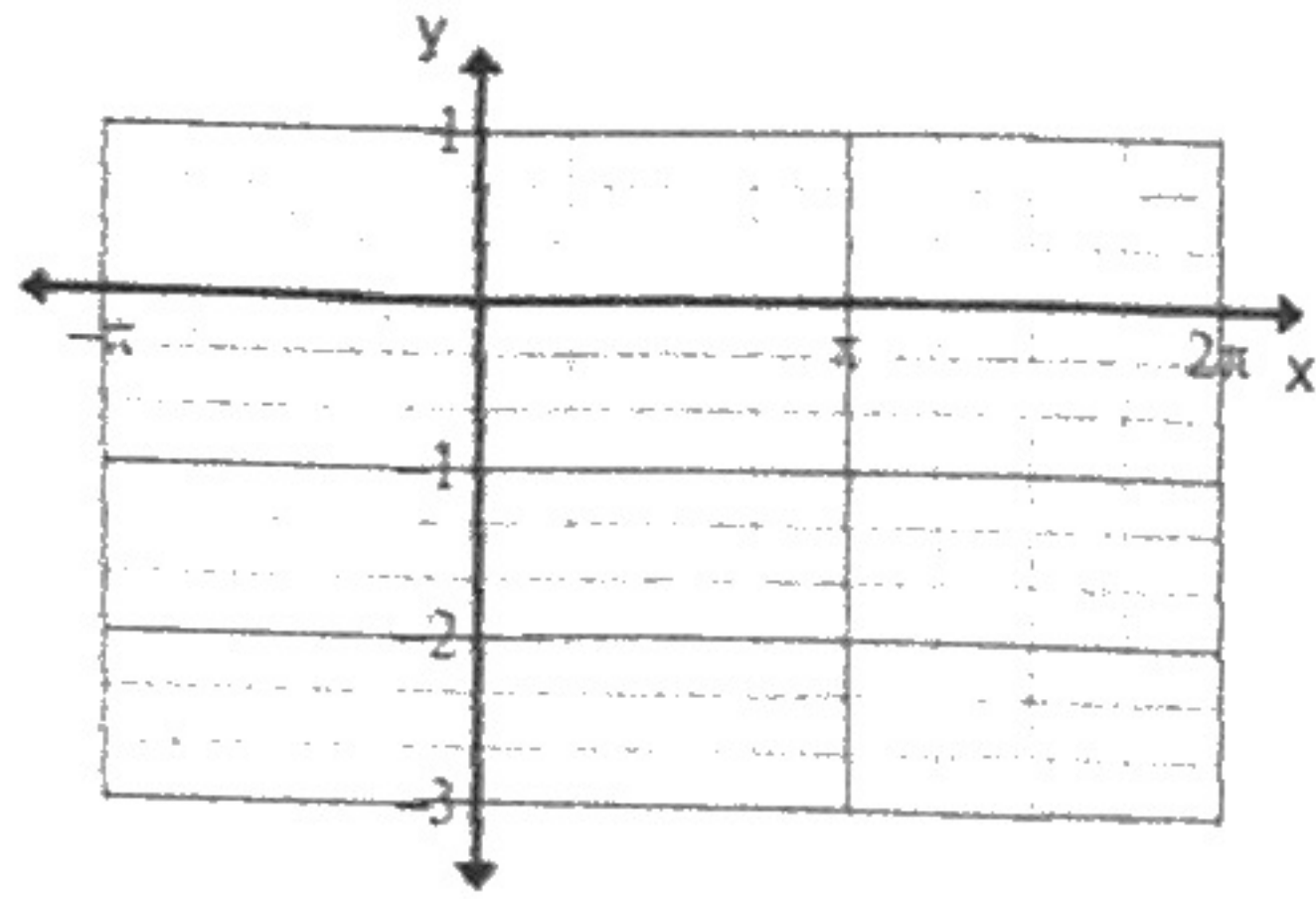
7.  $y = \frac{1}{2} \cot\left(\frac{1}{3}x\right) + 1$

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

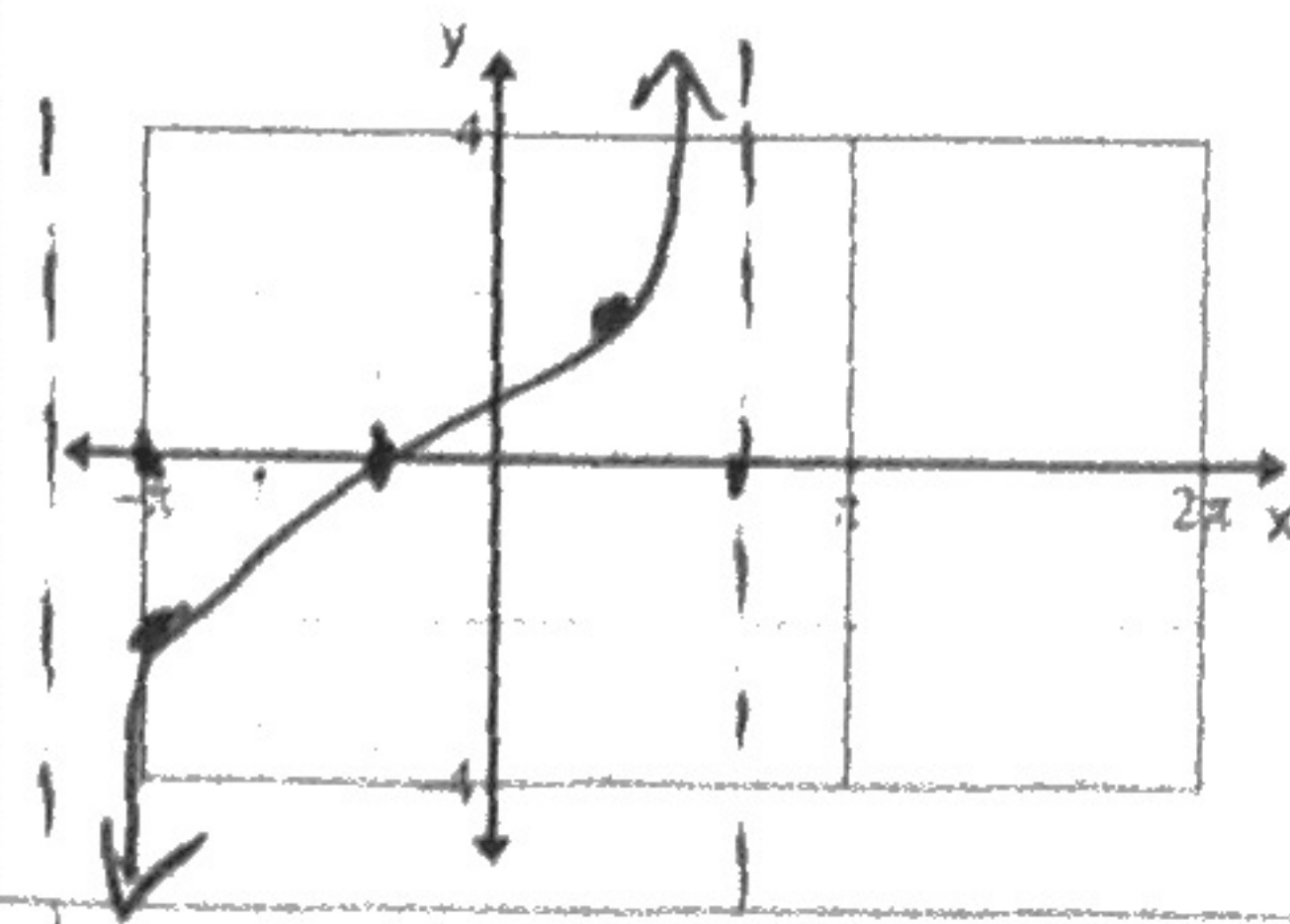
A: 4  
Flip: yes  
VS: -1  
P:  $\pi$   
PS:  $\frac{\pi}{4}$

9.  $y = -\cot(x + \pi) - 3$

10.  $y = -\frac{1}{3} \cot x - 1$



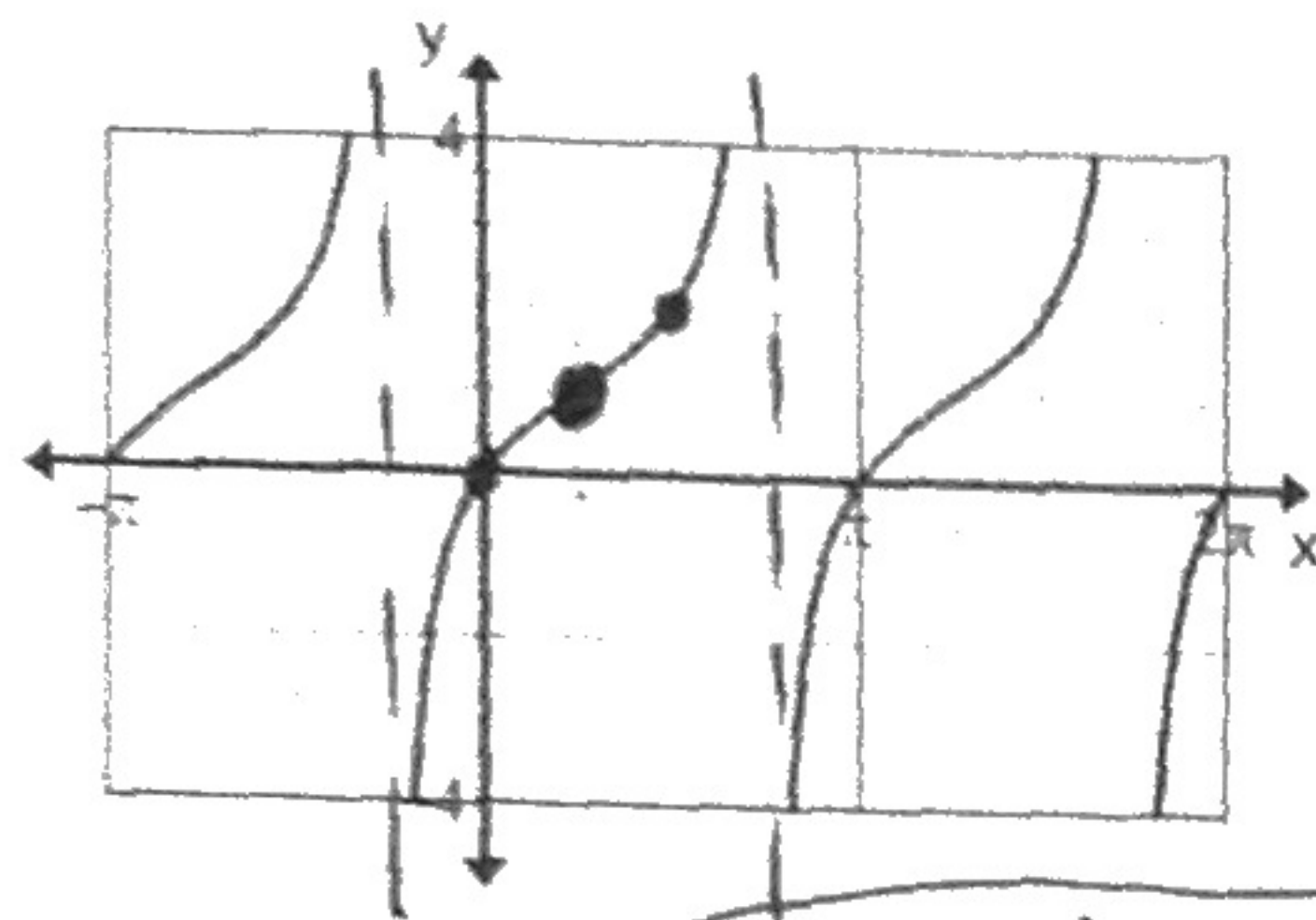
11.  $y = 2 \tan\left(\frac{1}{2}\left(x + \frac{\pi}{3}\right)\right)$



A: 2  
 F: NO  
 VS: 0  
 P: 2pi  
 PS:  $\frac{L\pi}{3}$

III. Write the equation for each trigonometric function.

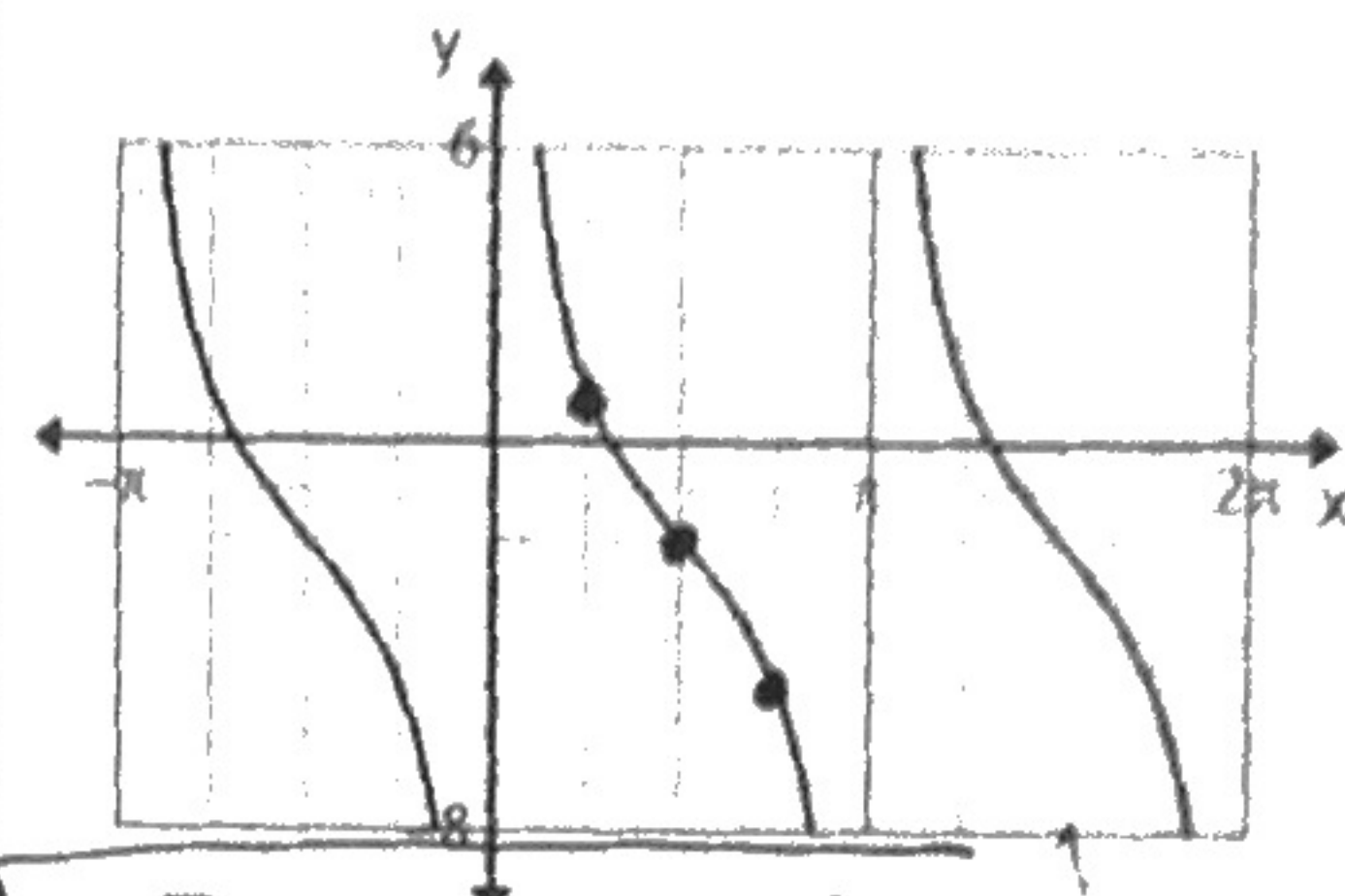
12.



A: 1  
 F: NO  
 VS: +1  
 P: pi  
 PS:  $R + \frac{\pi}{4}$

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

13.

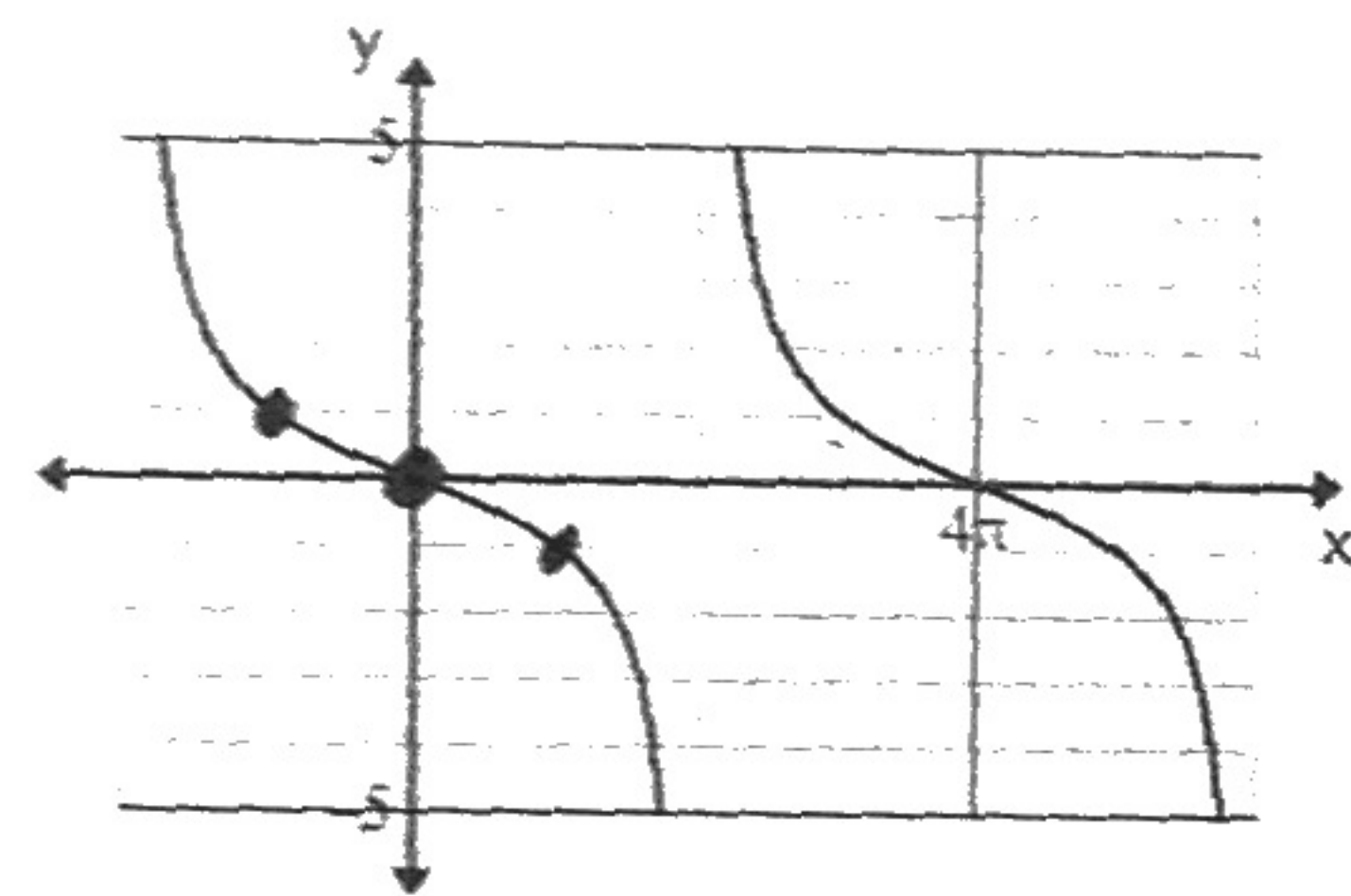


<u>Tan</u>	} <u>Cot</u>	
A: 2		A: 2
F: yes		F: NO
VS: -2		VS: -2
P: pi		P: pi
PS: $R + \frac{\pi}{2}$	PS: 0	

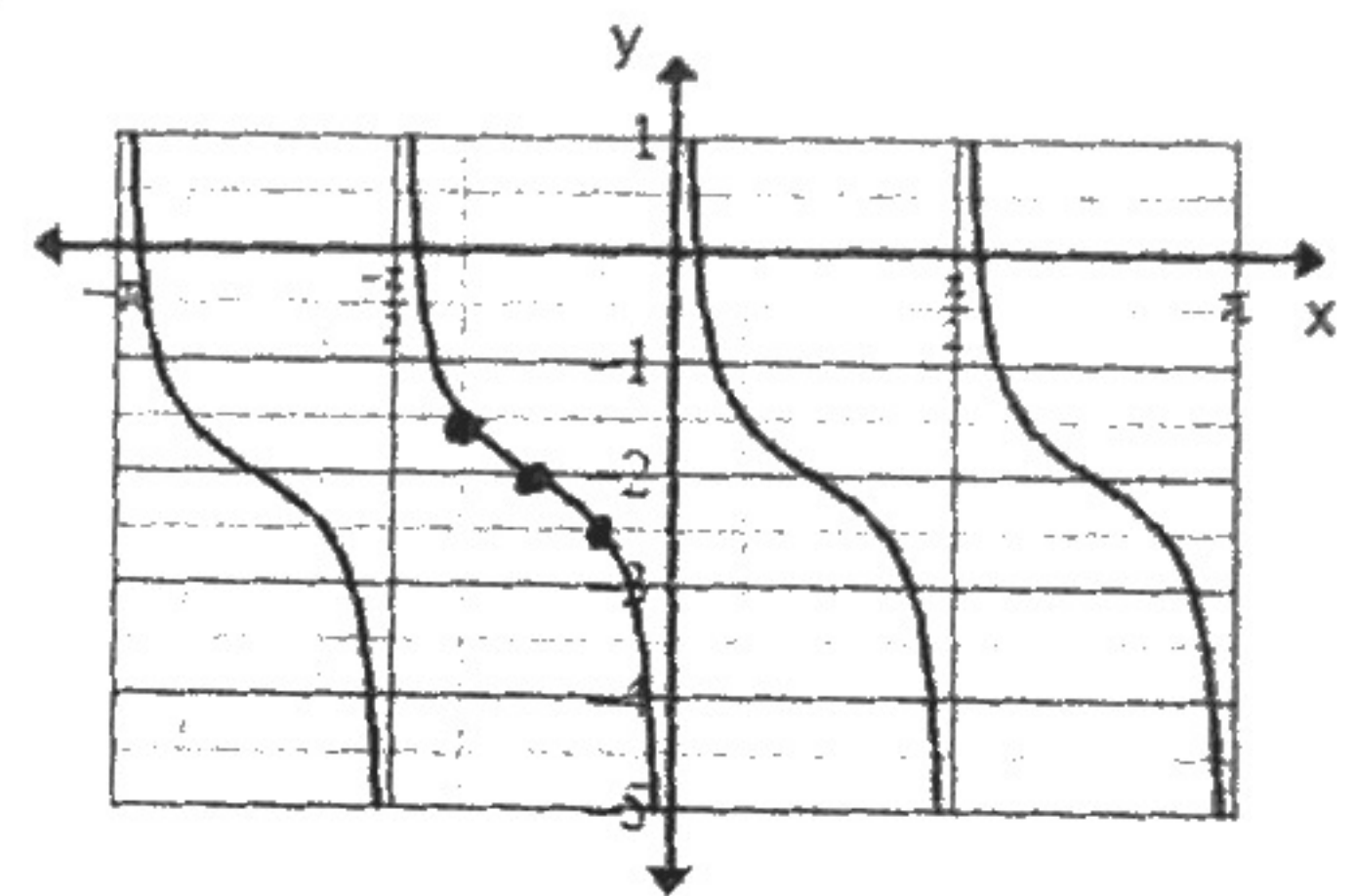
$y = -2 \tan\left(x - \frac{\pi}{2}\right) - 2$

$\text{OR } y = 2 \cot x - 2$

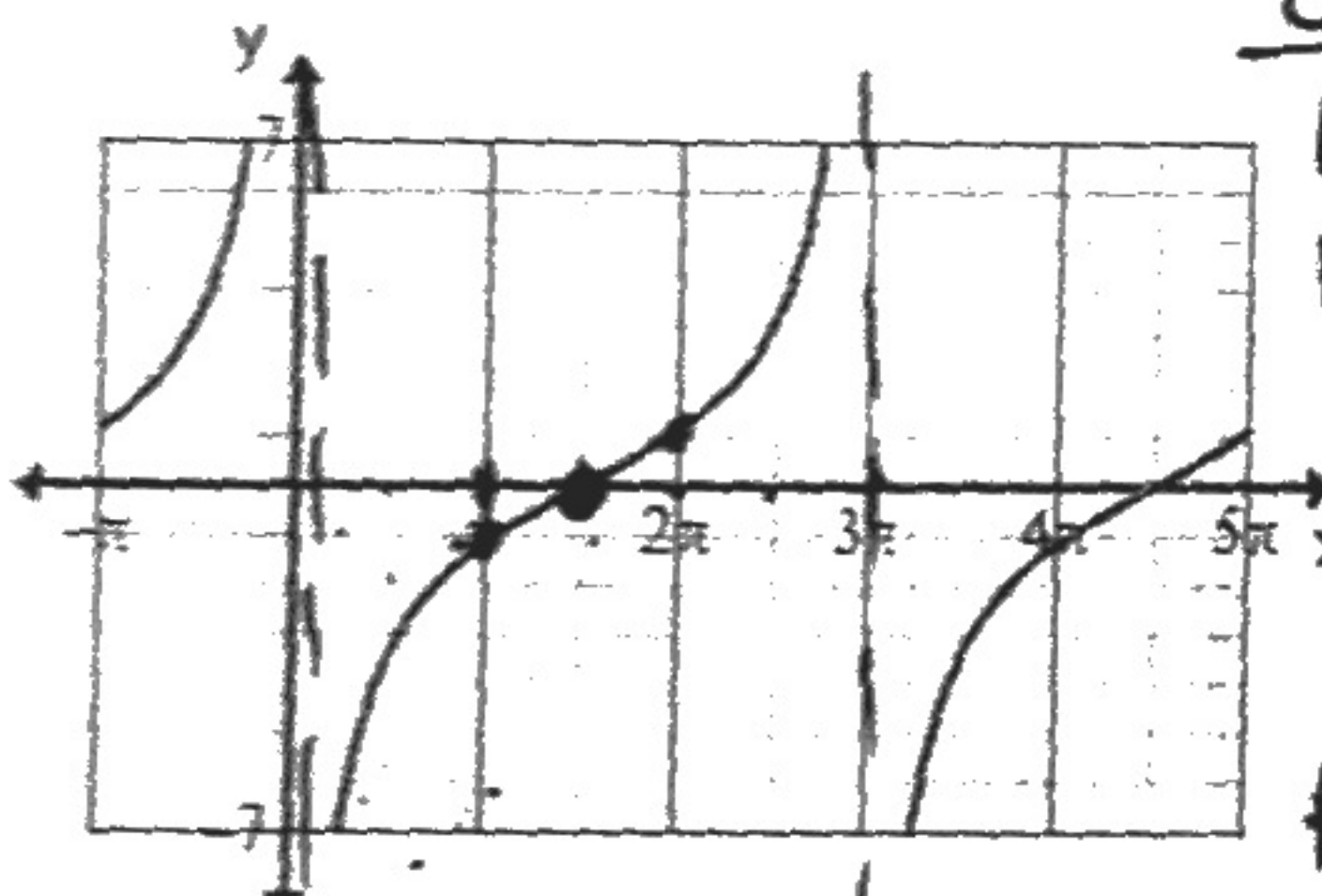
14.



15.



16.



COT  
 A: 1  
 F: yes  
 VS: 0  
 P: 3pi  
 b = 1/3  
 PS: ~~0~~

$y = -\cot \frac{1}{3} x$

17.

