

1. Given $g(x) = 2 + 3\tan\left[\frac{\pi}{8}(x+1)\right]$, which of the following statements is true?

I. The amplitude of $g(x)$ is 2.

II. The period of $g(x)$ is 8.

III. The phase shift is 1.

(a) I only (b) II only (c) III only

(d) I and II only (e) II and III

2. On the graph of $y = -\csc x$, as x increases on $x \in [0, \pi]$, the function y

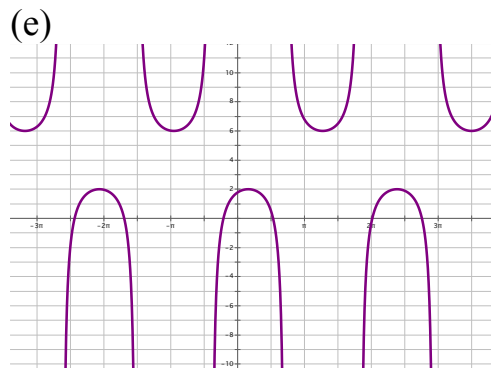
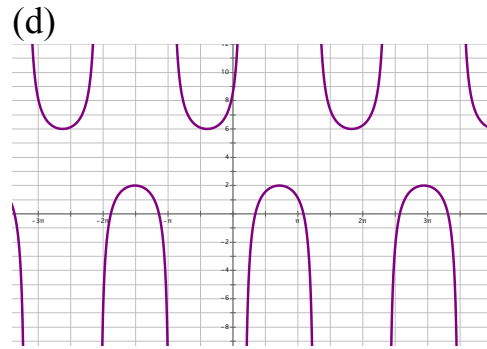
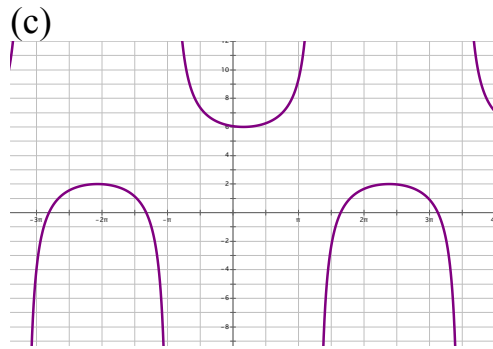
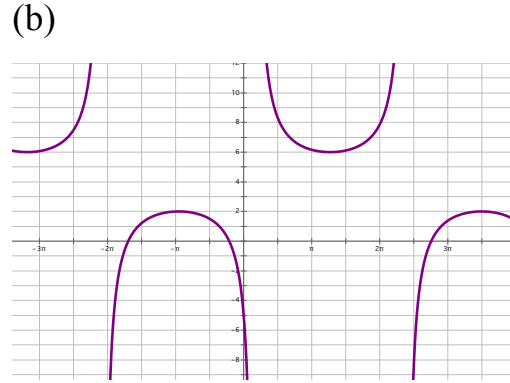
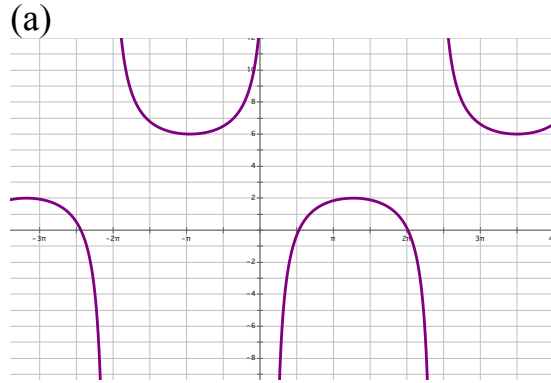
(a) decreases (b) is constant (c) increases

(d) decreases, then increases (e) increases, then decreases

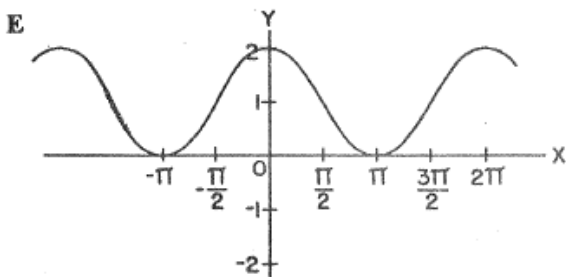
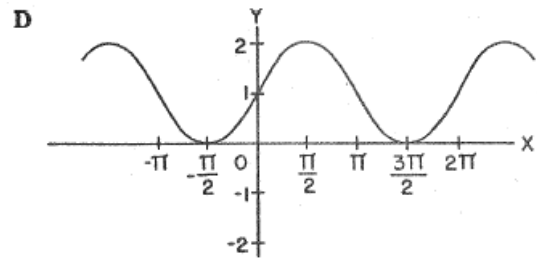
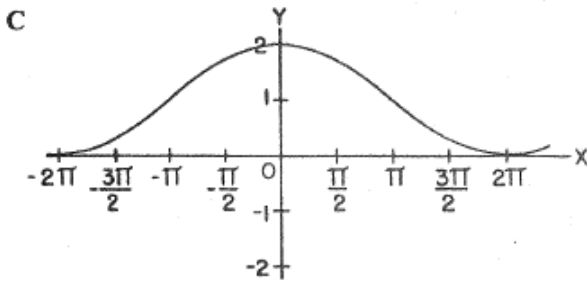
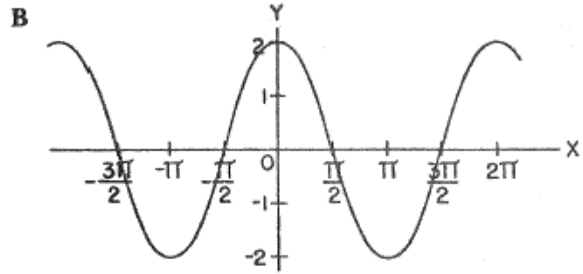
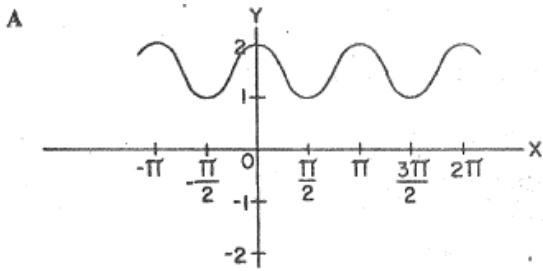
3. What is the smallest positive value where $y = 3 - 2\sin\left[\frac{\pi}{8}(x+3)\right]$ has a point at a minimum?

(a) 1 (b) 5 (c) 9 (d) 13 (e) 17

4. Which of the following is the graph of $y = 4 + 2 \csc\left(\frac{2\pi}{7}(x+3)\right)$? (Note: The marks on the x -axis are at every π units.)



5. Which of the following is the graph of $y = 1 - \sin(x + \pi)$?



- (a) A (b) B (c) C (d) D (e) E
-

Honors PreCalc '17-18

Name _____

Chapter 2 Test--FR

Calculator required

Score _____

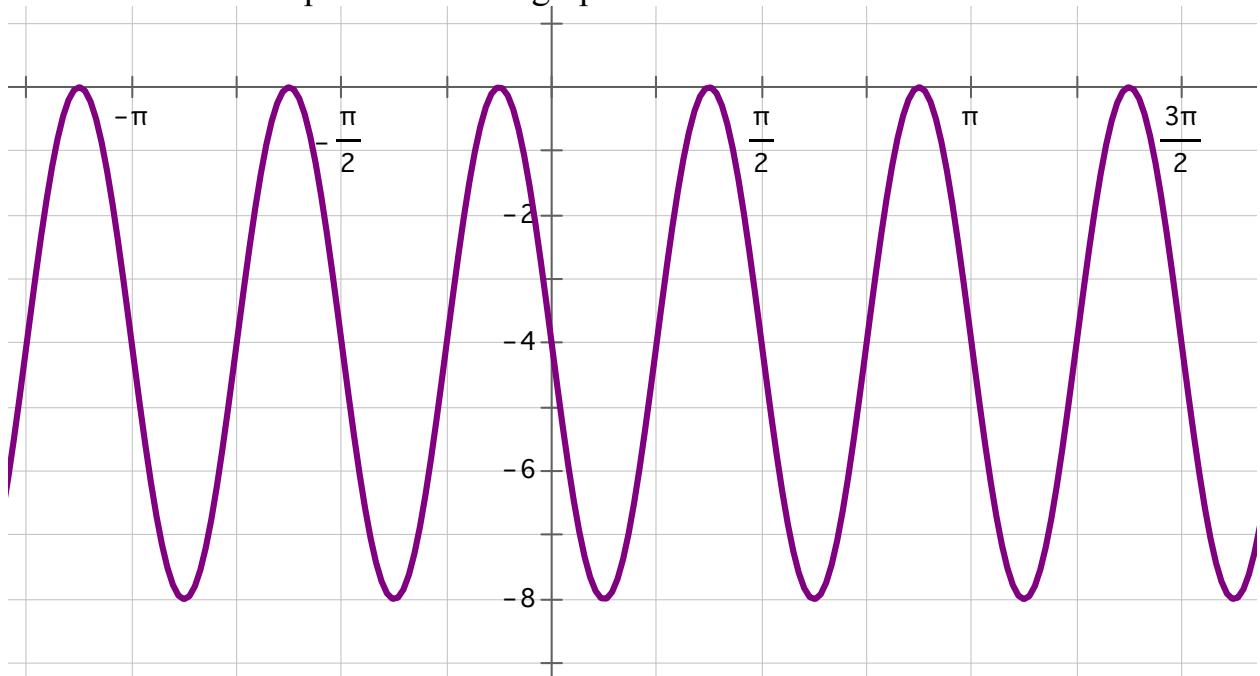
Round all answers to 3 decimals

6. Sketch one cycle of $y = -3 - 3\sin\left[\frac{\pi}{10}(x-1)\right]$

7. Sketch one cycle of $y = 1 + \cot\left[\frac{\pi}{12}(x+1)\right]$

8. Sketch one cycle of $y = -1 - \sec\left[\frac{\pi}{10}(x+2)\right]$

9. Find a sine equation for this graph:



10. If $H(x) = -1 - 3\cos\left[\frac{\pi}{10}(x+2)\right]$, find the first three negative values of x where $H(x) = 1.3$.

11. Astronomers have noticed that the number of visible sunspots varies sinusoidally with time. In 2003, there were a minimum of 10 sunspots and 11 years later the sunspots reached a maximum of 110.

a. Sketch the graph of this sinusoidal function

b. Write the particular equation expressing the number of visible sunspot over time.

c. Predict the number of sunspot that will be visible in 2017.

d. How many years after 2003 did the amount of visible sunspot first reach 100.