Honors PreCalc '16-17 Name_____
Chapter 2 Test--MC
Calculator NOT Allowed Score _____

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

I. The amplitude of $g(x)$ is 3.
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 III only (e) II and III

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2. On the graph of $y=-\cot x$, 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

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

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

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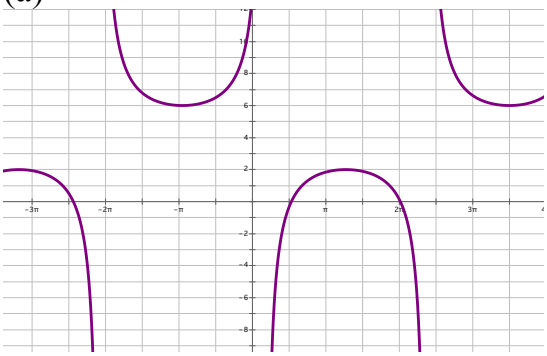
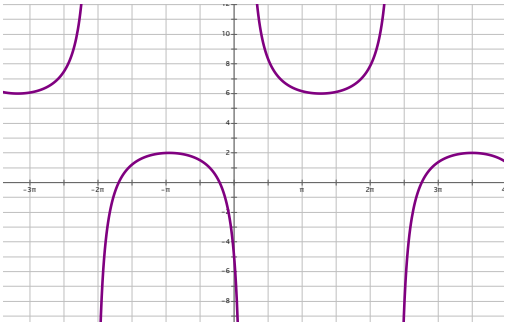
4. Which of the following is the graph of $y = 4 + 2\sec\left(\frac{\pi}{7}(x+3)\right)$? (Note: The marks on the x-axis are at every π units.)

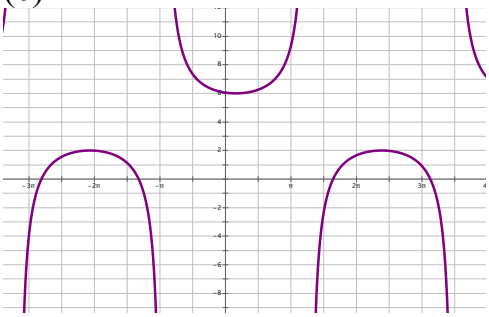
(a)



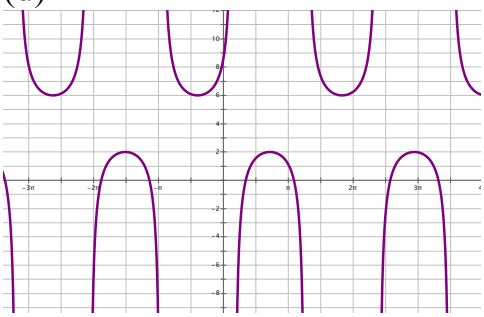
(b)



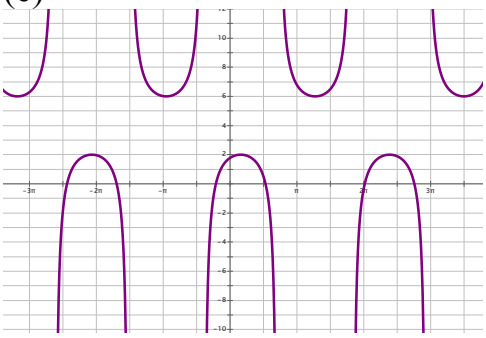
(c)



(d)

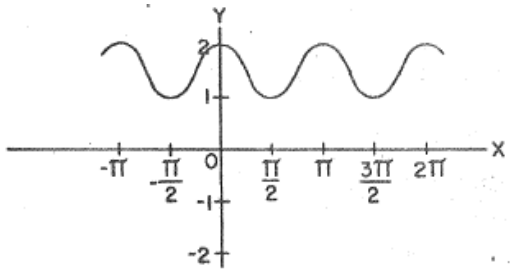


(e)

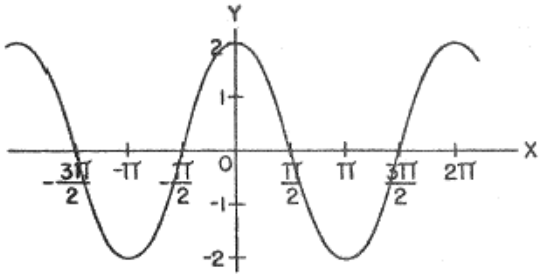


5. Which of the following is the graph of $y = 1 + \sin\left(x + \frac{\pi}{2}\right)$?

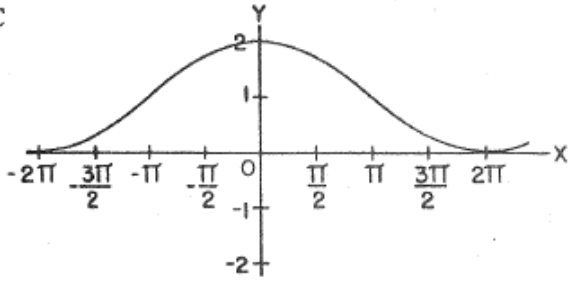
A



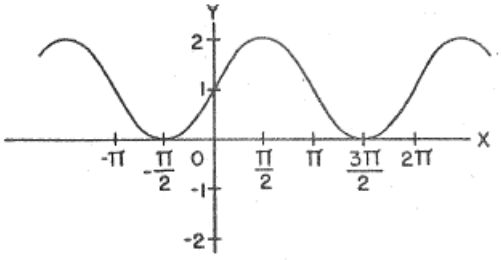
B



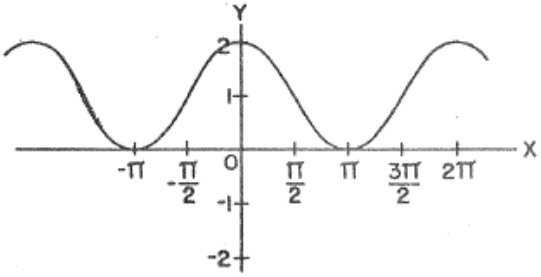
C



D



E



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

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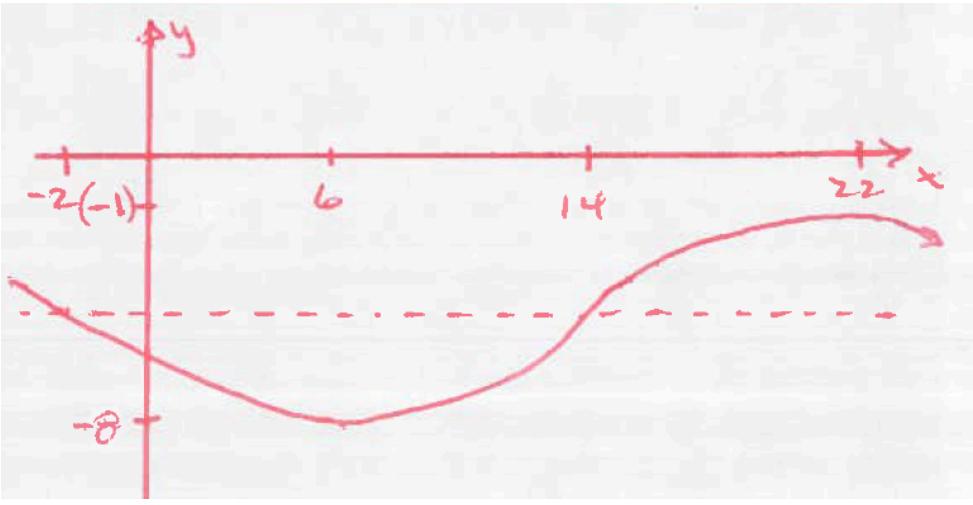
Chapter 2 Test--FR
Calculator required Score _____
Round all answers to 3 decimals

6. Sketch one cycle of $y=-1-4\cos\left[\frac{\pi}{12}(x-2)\right]$

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

8. Sketch one cycle of $y=-2+\csc\left[\frac{\pi}{5}(x+1)\right]$

9. Find a sine equation for this graph:



10. If $y=-1-4\cos\left[\frac{\pi}{12}(x-2)\right]$, find the first three negative values of x where $H(x)=2.3$.

11. According to Strauss and Howe's theory of *Generations*, American society cycles between Civic and Idealistic attitudes based on birth years. Generations like the Progressives and the Baby Boomers are highly idealistic, while the Greatest Generation and the Millenials are highly civic. Generations like the Lost Generation, the Silent Generation and the 13ers straddle the two. If highly civic equals 1 and highly idealistic equals -1, the y-trend seems to vary sinusoidally with birth year. The peak of the Progressives occurred in 1889, the peak of the Greatest Generation occurred in 1922, the peak of the Baby Boomers occurred in 1955, and the peak of the Millenials occurred in 1988.

a. Sketch two cycles of the Generations trend.

b. Find an equation that represents C in terms of year t.

c. Dr. Quattrin was born in 1960. What would his Civic rating be?

d. What year will the third time in the 21st Century that the Civic/Idealistic rating was 0.2?