**Name:** _____ **Date:** _____ **Pd:** _____ **ID: A**

# PreCalc: Chapter 7 REVIEW

**Short Answer**

1. Graph the equation on the given interval.
   $f(t) = \tan t;\ [-2\pi, \pi]$

2. What are all the exact $t$-values for which $\tan t = \sqrt{3}$?

3. Graph $f(t) = \sec t$?

4. Graph $f(t) = -2 \tan t$?

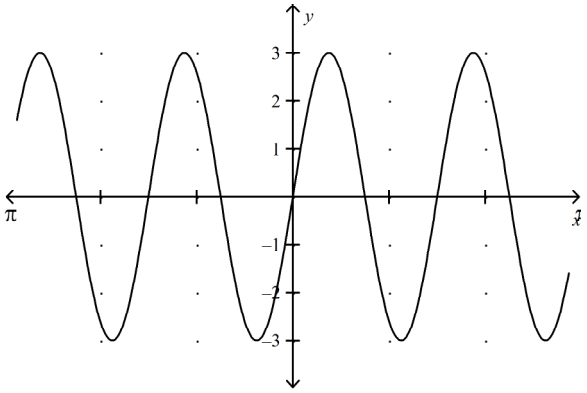
5. Graph the function $f(t) = -\csc\left(\frac{1}{4}t\right)$?

6. Write the rule of a function $g$ whose graph is the graph of $f(t) = \sec t$ stretched vertically by a factor of 4 and shifted 4 units to the left and down 11 units.

7. A water wave is created in a wave tank. It has an amplitude of 5 and a period of $\frac{3\pi}{7}$. Find the equation of this wave as a sine function.

8. What is the amplitude and period of $f(t) = -5\cos(8t)$?

9. Find a function for the graph below.



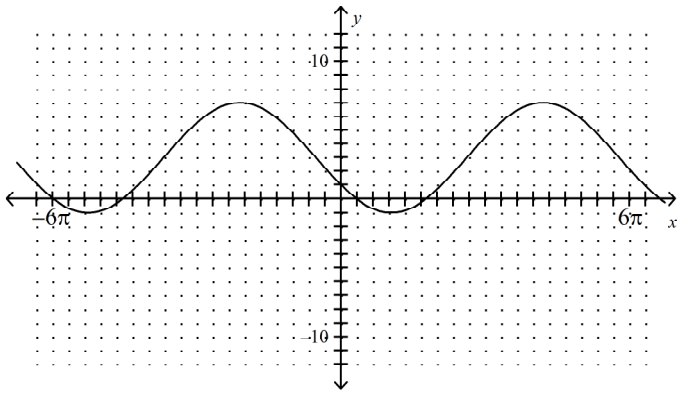

10. Graph the given function.
$f(t) = 4\sin(-3t)$

11. Graph the given function.
$f(t) = \frac{1}{3}\tan\left(\frac{1}{8}\pi t\right)$

12. What are the amplitude, period, and phase shift of the given function?
$f(t) = -7\sin(4t - 1)$

13. What are the amplitude, period, and phase shift of the given function?
$f(t) = \frac{1}{3}\cos(2t + 3\pi)$

14. Write the rule of a function of the form $f(t) = a\sin(bt + c) + d$ whose graph appears to be identical to the given graph.




15. Graph the equation on the given interval.
$f(t) = \cos t; [-\pi, \pi]$

16. Find all the exact $t$-values for which $\cos t = \frac{\sqrt{3}}{2}$.

17. For what values of $t$ on the interval $[0, 2\pi]$ is $\sin t = \frac{\sqrt{2}}{2}$?

18. Sketch a graph of $f(t) = -2\cos t$.

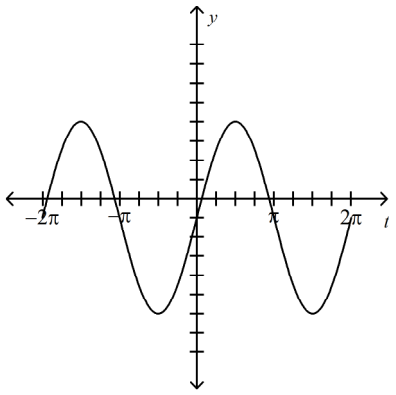
19. Sketch a graph of $f(t) = -7\cos t - 1$.

20. List the transformations that change the graph of $f(t) = \sin t$ into the graph of $g(t) = -8\sin t - 2$.

21. Graph the function $f(t) = 2\csc t$.

22. Graph the function $f(t) = \tan\left(t - \frac{2}{3}\right) - 7$.

23. Calculate the period and amplitude of the function.




24. State the amplitude and period of $f(x) = 5\cos\frac{2}{5}t$.

25. Sketch a sine function graph with a period of 4 and an amplitude of 3.

26. For the function $f(x) = -\frac{1}{3}\cos(3t - 2\pi) - 3$, identify:

    a. the amplitude.
    b. the period.
    c. the phase shift.
    d. the vertical shift.

27. For the function $f(t) = \frac{1}{2}\cos\left(\frac{t}{4} - 2\pi\right)$, identify:

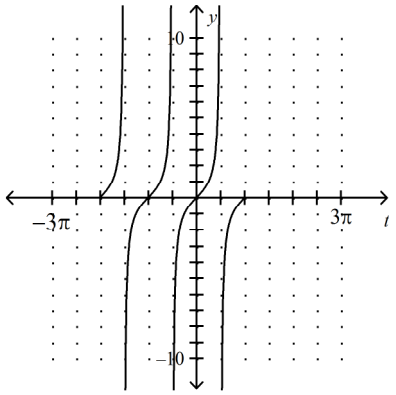
    a. the amplitude.
    b. the phase shift.
    c. the period.

28. Write a sine function with the given amplitude, period, phase shift, and vertical shift.

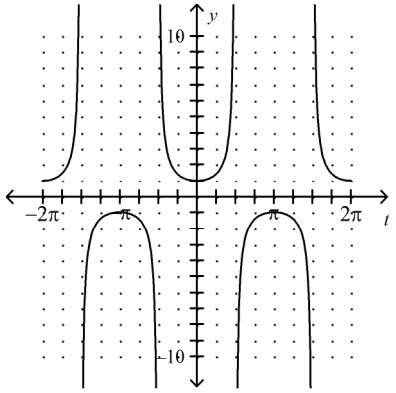
    amplitude: 3; period: $\pi$; phase shift: $\frac{1}{3}\pi$; vertical shift: –4

# PreCalc: Chapter 7 REVIEW
# Answer Section

## SHORT ANSWER

1.



2. $\frac{\pi}{3}, \frac{4\pi}{3}$

3.
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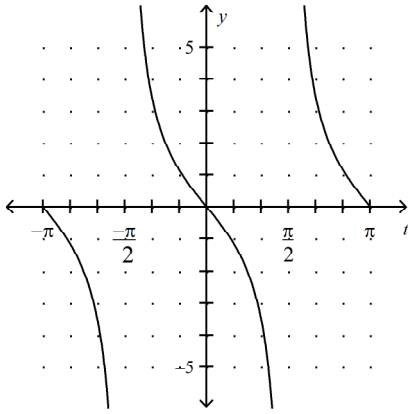

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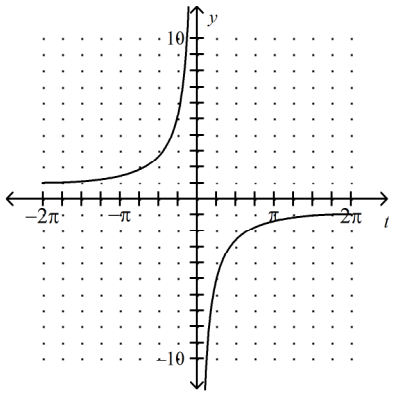


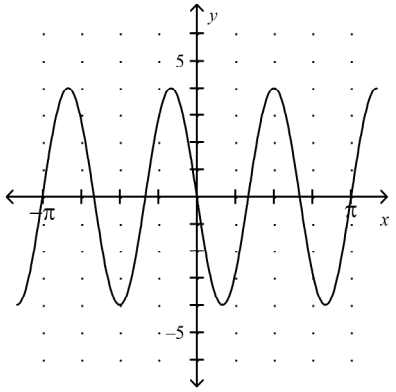

6. $g(t) = 4\sec(t+4) - 11$

7. $f(t) = 5\sin\dfrac{14t}{3}$

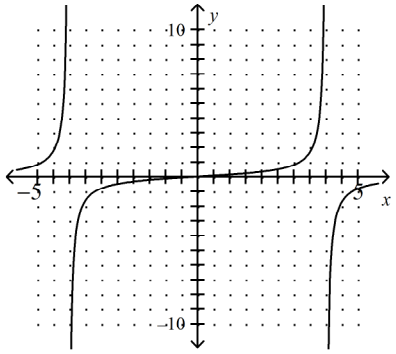
8. amplitude: 5 period: $\dfrac{1}{4}\pi$

9. $f(t) = 3\sin 4t$

10.




11.




12. amplitude: 7

period: $\dfrac{\pi}{2}$

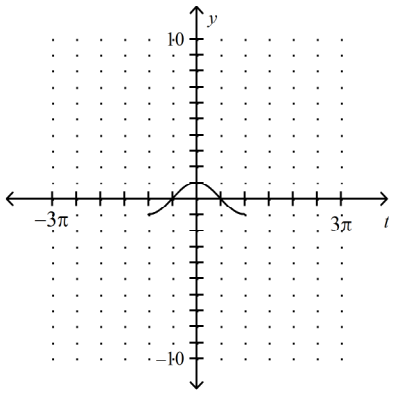
phase shift: $\dfrac{1}{4}$

13. amplitude: $\frac{1}{3}$

    phase shift: $-\frac{3}{2}\pi$

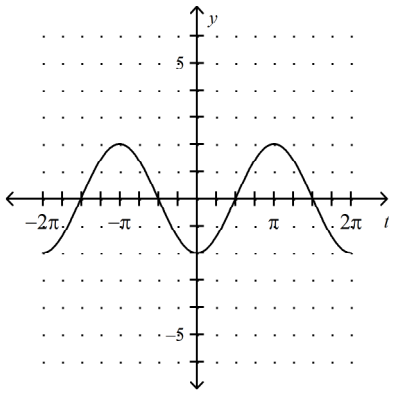
    period: $\pi$

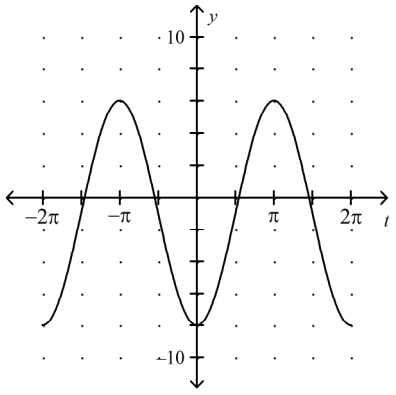
14. $-4\sin\left(\frac{1}{3}t+\frac{\pi}{6}\right)+3$

15. 

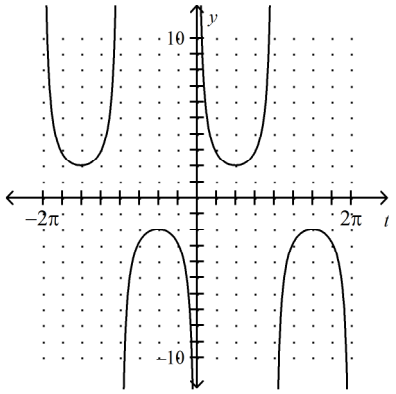

16. $\frac{\pi}{6}, \frac{11\pi}{6}$

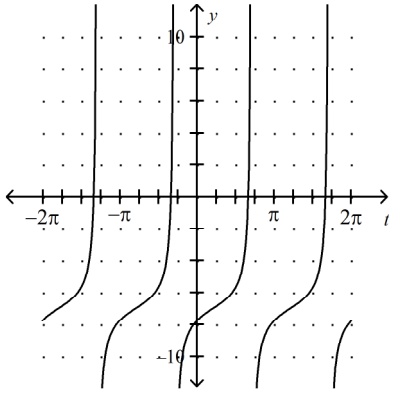
17. $\frac{\pi}{4}, \frac{3\pi}{4}$

18. 


19. 

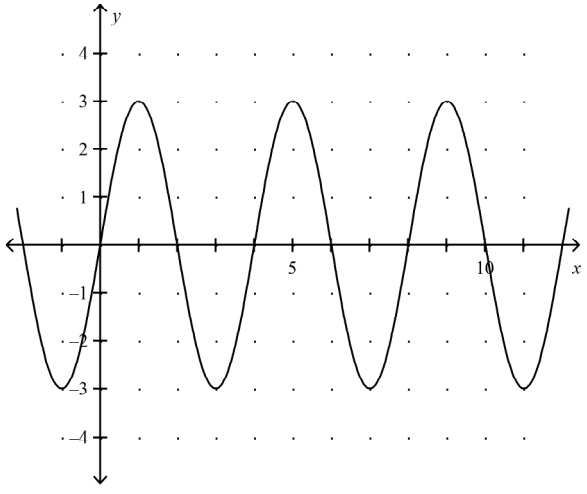
20. Reflect the graph of $f$ across the $x$-axis and stretch vertically by a factor of 8, then shift the resulting graph vertically 2 units downwards.

21. 


22. 


23. period: $2\pi$ amplitute: 5

24. Amplitude: 5, Period: $5\pi$

25. 


26. a. amplitude: $\frac{1}{3}$; period: $\frac{2}{3}\pi$; phase shift: $\frac{2}{3}\pi$; vertical shift: $-3$

27. a. $\frac{1}{2}$ b. $8\pi$ c. $8\pi$

28. $f(x) = \pm 3 \sin\left(2t - \frac{2}{3}\pi\right) - 4$