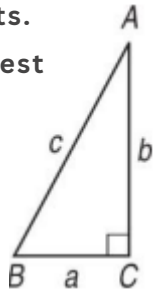
DATE:_____ PERIOD:_____ NAME: _____

CALCULATOR

CHAPTER 9 REVIEW

- ✓ SHOW YOUR WORK CLEARLY TO GET FULL CREDIT ON YOUR TEST.
- ✓ WRITE THE DECIMALS AS INSTRUCTED IN EACH QUESTION.
- ✓ KEEP YOUR ANSWERS IN RADIAN IF THE PROBLEM IS GIVEN IN RADIAN.

(#1 - 2) Solve △ ABC using the diagram at the right and the given measurements. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.



1. $A = 55°,\ b = 3\sqrt{2}$

2. $sinA = \frac{8}{17},\ c = 34$

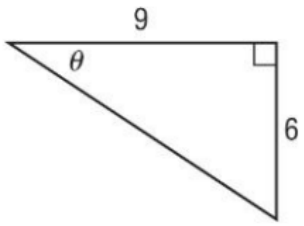
3. A semi tractor trailer truck has tires that have a diameter of 20 inches. How far does the truck travel in feet after three complete tire rotations? Round to the nearest tenth.

4. A car has tires that have a radius of 8 inches. How far does the truck travel in feet after two fifths of a full rotation? Round to the nearest tenth.

5. A person standing on level ground observes a hot air balloon directly above a landmark that is 500 meters away. The observer measures the angle of elevation to the balloon to be 22°. If the observer's eyes are 1.7 meters above the ground, what is the total height of the hot air balloon?

NO CALCULATOR

6. Find the values of the six trigonometric functions for angle θ.



7. Rewrite each degree measure in radians and each radian measure in degrees.

   a. 260°

   b. $\frac{11\pi}{9}$

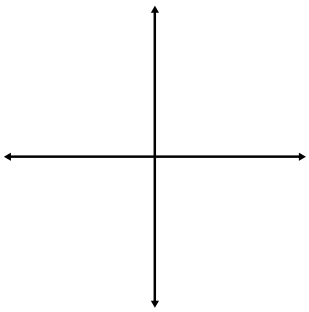
   c. -5π

8. Find one angle with positive measure and one angle with negative measure coterminal with the given angle.

   a. 420°

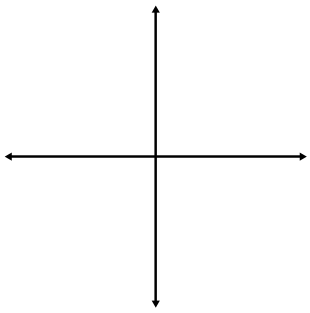
   b. $\frac{15\pi}{7}$

9. Find the exact values of the six trigonometric functions of θ if the terminal side of θ in standard position contains the point (−6 , −1).

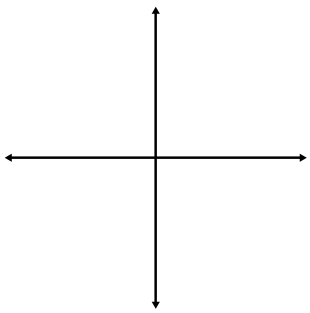


10. Sketch the angle. Then find its reference angle.

a. $-\frac{7\pi}{6}$



b. -400°



(#11 - 13) Find the exact value of each trigonometric expression.

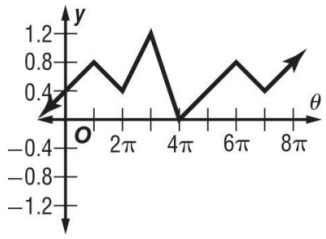
11. $csc\left(\frac{7\pi}{4}\right)$

12. $tan\left(\frac{5\pi}{6}\right)$

13. $sin\left(-150^\circ\right)$

14. The terminal side of θ in standard position contains the point (0, -8). Find the values of the six trigonometric functions at θ.

15. Determine the period of the function.

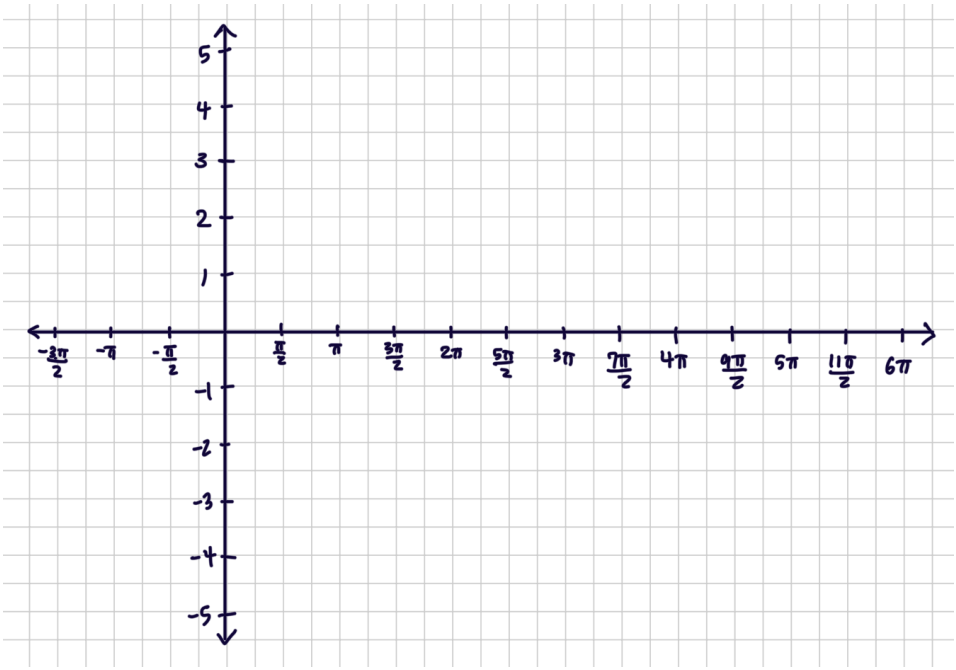


16. The height of water in a wave pool oscillates between a maximum of 13 feet and a minimum of 5 feet. The wave generator pumps 6 waves per minute. Write a sine function that represents the height of the water at time t seconds.

(#17 - 21) Find the amplitude, period, phase shift, vertical shift, and midline. Then graph.
Draw the graph from left to right across the entire grid.

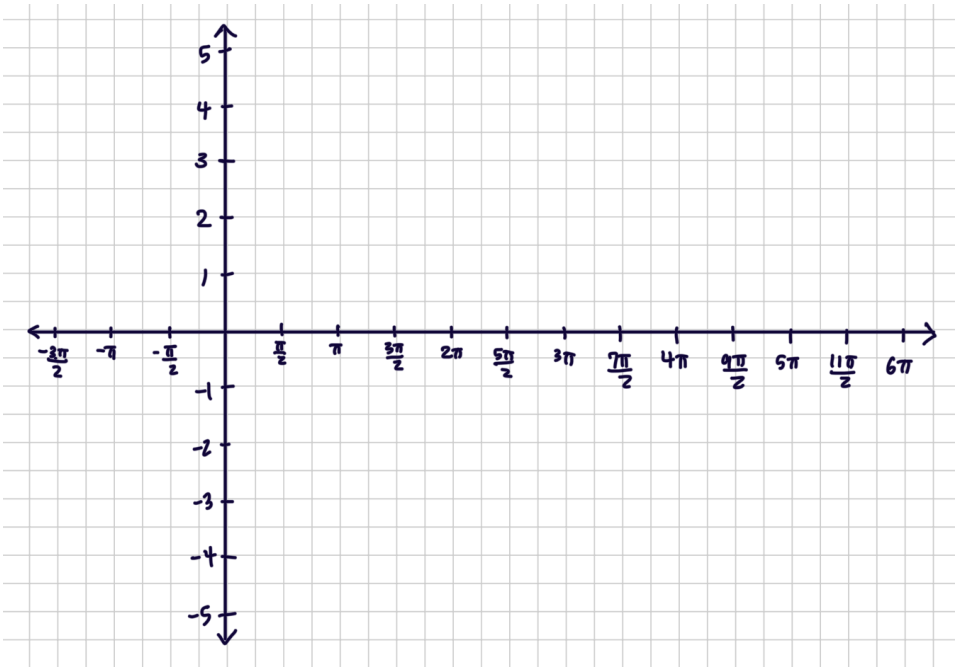
17. $y = \frac{1}{2} sec \frac{1}{2}\theta$

- amplitude:
- period:
- phase shift:
- vertical shift:
- midline:



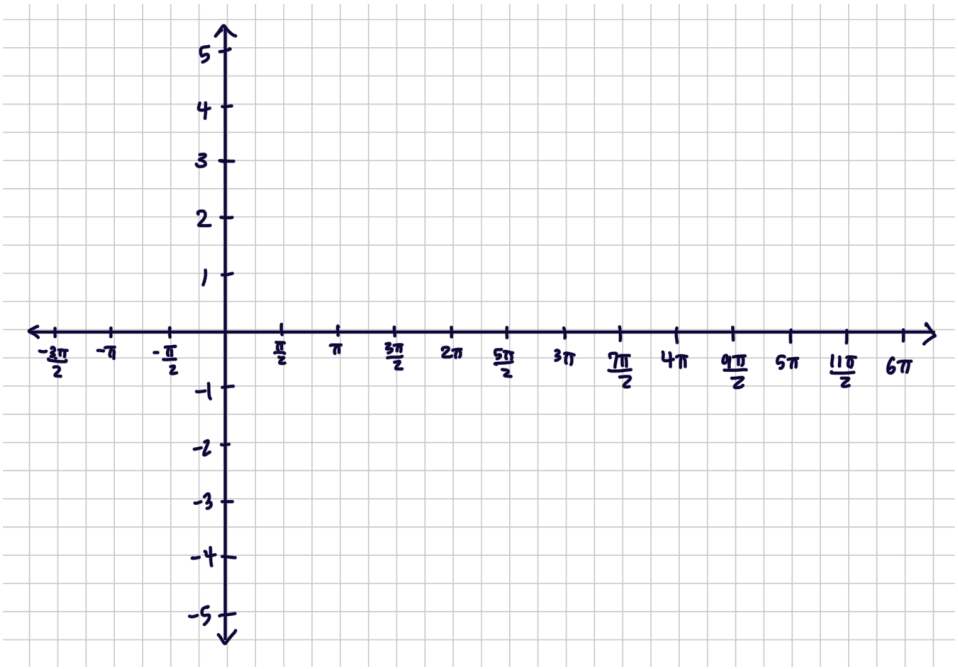
18. $y = -tan\frac{1}{2}\theta + 3$

- amplitude:
- period:
- phase shift:
- vertical shift:
- midline:



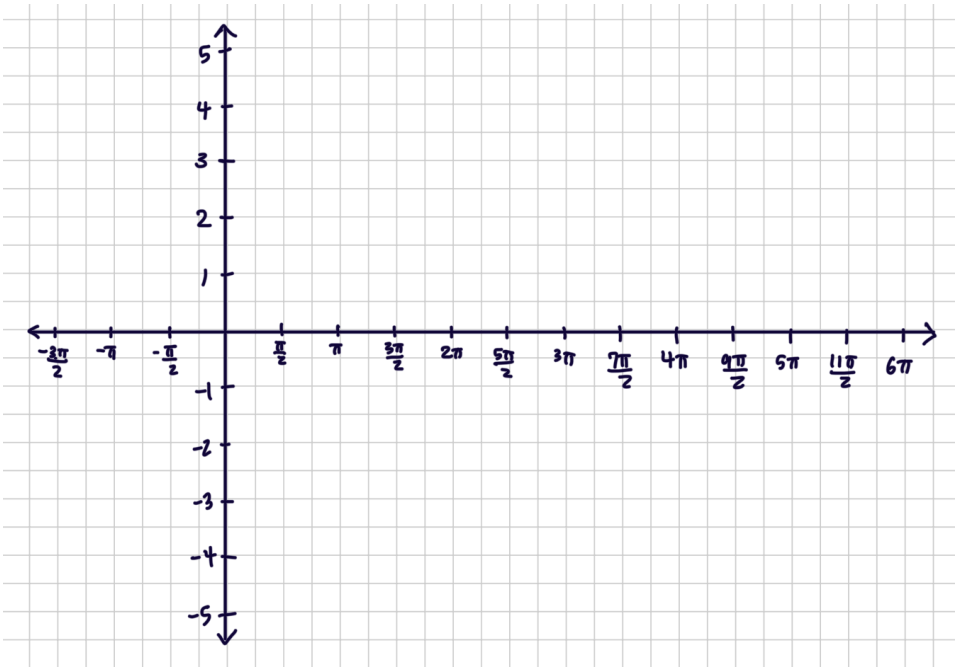
19. $y = 3cos\,(\theta - \pi) + 1$

- amplitude:
- period:
- phase shift:
- vertical shift:
- midline:



20. $y = -2sin\frac{1}{2}\theta$

- amplitude:
- period:
- phase shift:
- vertical shift:
- midline:



21. $y = 3csc\frac{1}{2}\left(\theta + \frac{\pi}{2}\right)$

- amplitude:
- period:
- phase shift:
- vertical shift:
- midline: