



MATH 150 - WEEK-IN-REVIEW 9

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PROBLEM STATEMENTS, SECTIONS 7.2-7.5

1. Evaluate the following:

a) $\sin\left(\frac{4\pi}{3}\right)$

a) $\tan(315^\circ)$

b) $\cos\left(\frac{5\pi}{3}\right)$

b) $\csc(120^\circ)$

2. Use the reference angle to find the indicated trigonometric value for the specified angles.

(a) $\sin\left(\frac{7\pi}{6}\right) =$

(b) $\cos\left(\frac{11\pi}{4}\right) =$

(c) $\tan\left(-\frac{2\pi}{3}\right) =$



3. Find the exact value of the six trigonometric functions, given the following:

hypotenuse = 31, side opposite the angle = 17 , Quadrant II

4. Given $\sin \theta = \frac{3}{7}$ and θ in QI, use the trigonometric identities to find the exact values of each:

a. $\cos(\theta) =$

b. $\cot(\theta) =$

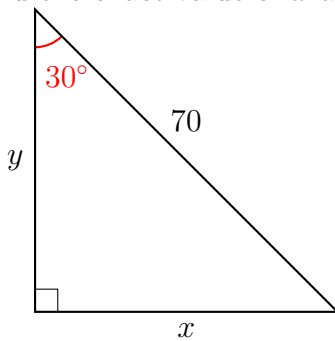
c. $\csc(\theta) =$

d. $\tan(90^\circ - \theta) =$



5. From a point on the ground 50 feet from the foot of a tree, the angle of elevation of the top of the tree is 45° . Find the height of the tree.

6. Find the exact value of x and y .





7. Given $y = -3\sin(4x - \pi) + 2$, describe the period, amplitude, and phase shift of the graph. Then graph the function.

Period:

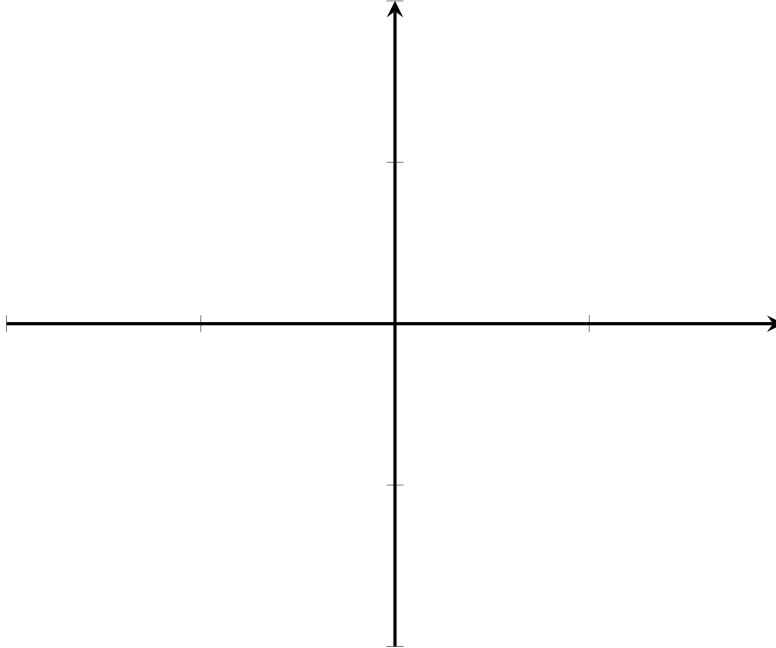
Amplitude:

Phase Shift:

Period End points

Start:

End:





8. Given $y = \frac{1}{5} \cos\left(\frac{\pi}{2}x - 3\pi\right)$, describe the period, amplitude, and phase shift of the graph. Then graph the function.

Period:

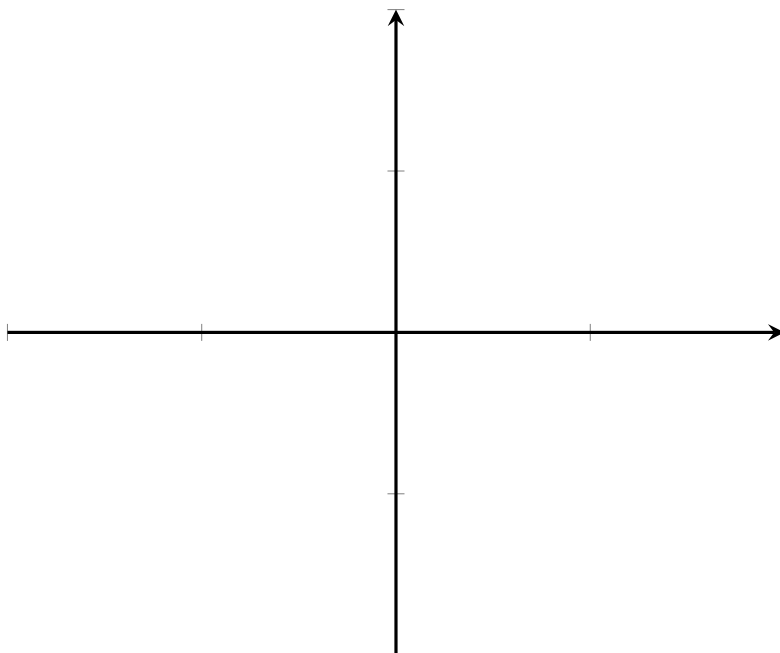
Amplitude:

Phase Shift:

Period End points

Start:

End:





9. Find all Vertical asymptotes of the equation $f(x) = 2 \tan \left(3x + \frac{\pi}{4} \right)$, then state the vertical asymptotes on the interval $[0, 2\pi)$.

10. Find Vertical asymptotes of the equation $f(x) = \csc \left(3\pi x - \frac{\pi}{6} \right) + 7$, then state the vertical asymptotes on the interval $[0, \frac{\pi}{6})$.



11. Let $(24, -7)$ be a point on the terminal side of θ . Find the sine, cosine, and tangent of θ .

12. Suppose $\sin(\theta) = -\frac{8}{\sqrt{73}}$ and $\tan(\theta) > 0$. Find $\cot(\theta)$ and $\sec(\theta)$



13. Given $y = -2 \cot(2x - 5)$, describe the period, amplitude, and phase shift of the graph. Then graph the function.

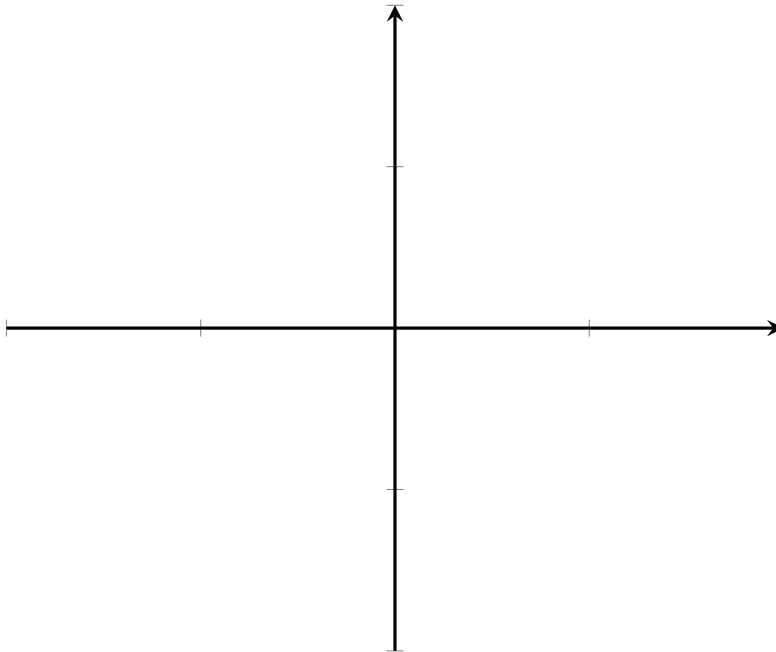
Period:

Phase Shift:

Period End points

Start:

End:





14. Given $y = \sec\left(3x + \frac{\pi}{6}\right) - 1$, describe the period, amplitude, and phase shift of the graph. Then graph the function.

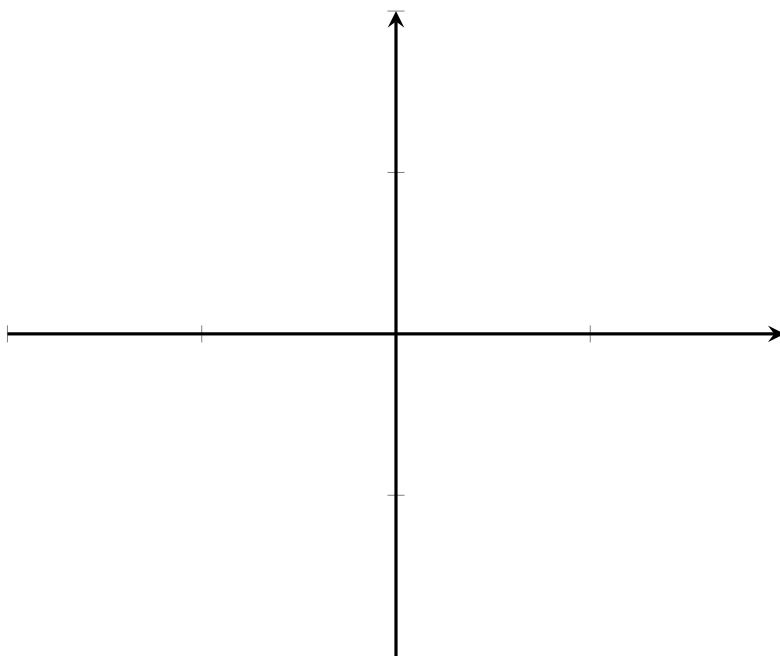
Period:

Phase Shift:

Period End points

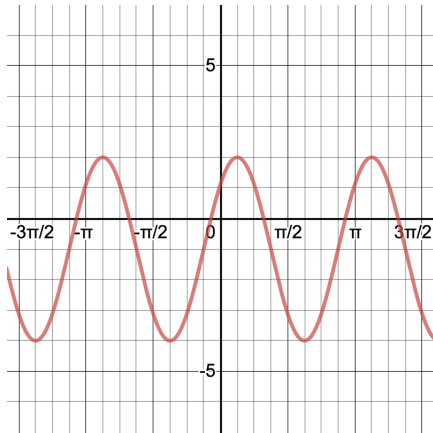
Start:

End:





15. Given the graph, write the equation of the sine function which matches the graph.





16. Write an equation for a function with the given characteristics. A sine curve with a period of $\frac{\pi}{4}$, an amplitude of 6, a right phase shift of 3π .