

Pre-Calculus Math 12

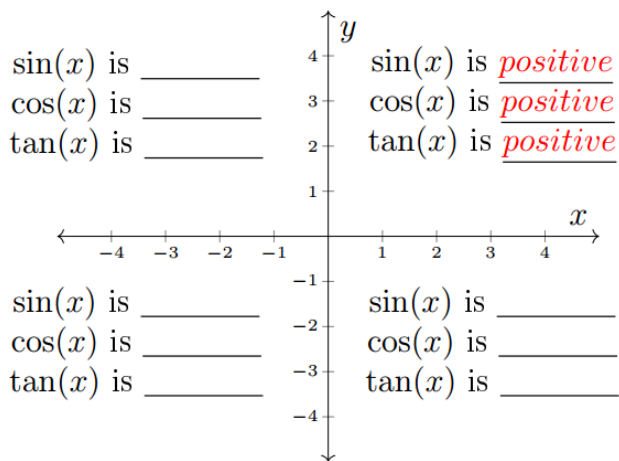
Chapter 7: Trigonometric Equations and Identities

Lesson 1: Solving Trigonometric Equations Graphically

Question #1

Reference Q.18038

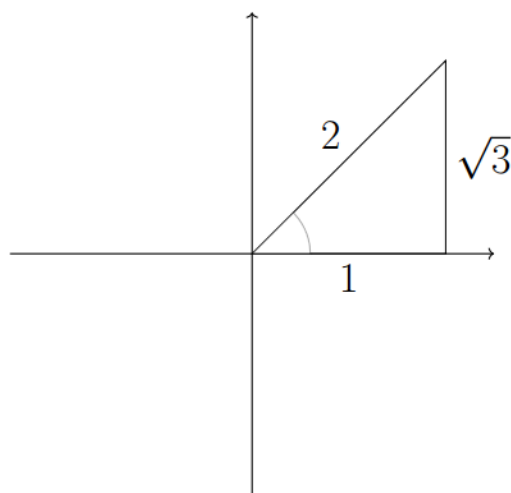
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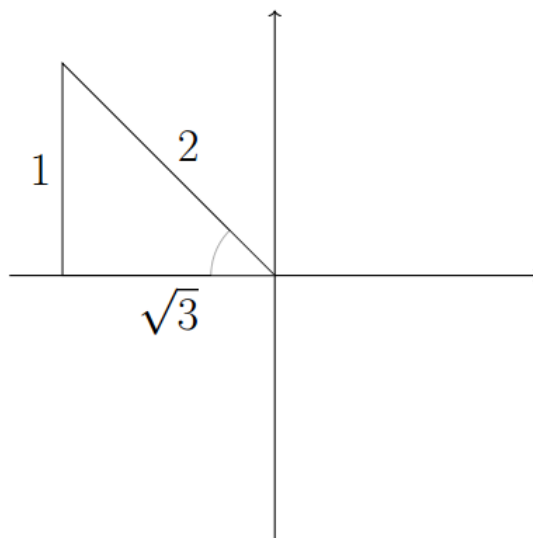
Question #2

Reference Q.18039

Find all co-terminal angles (in radian measure) for the given terminal arm.



a.

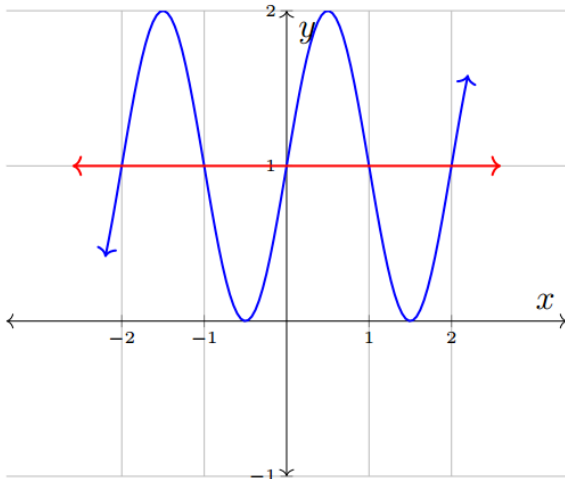


b.

Question #3

Reference Q.18040

Consider the following graph.

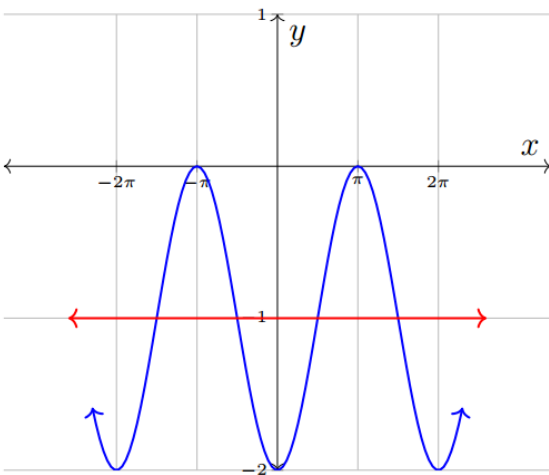


- Find the solutions for $0 \leq x \leq 2$. (You do not need any calculations.)
- Find the general solutions.

Question #4

Reference Q.18041

Consider the following graph.

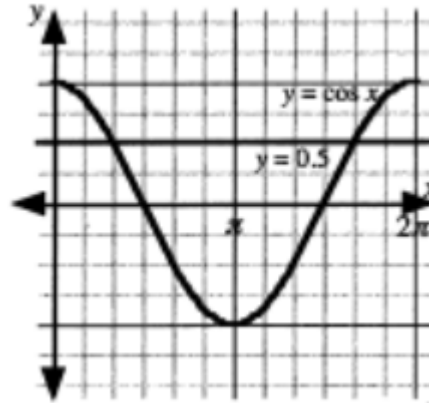


- Find the solutions for $0 \leq x \leq 2\pi$. (You do not need calculations.)
- Find the general solutions.

Question #5

Reference Q.12523

The diagram shows the graph of the equations $y = \cos x$ and $y = 0.5$ in $0 \leq x \leq 2\pi$.

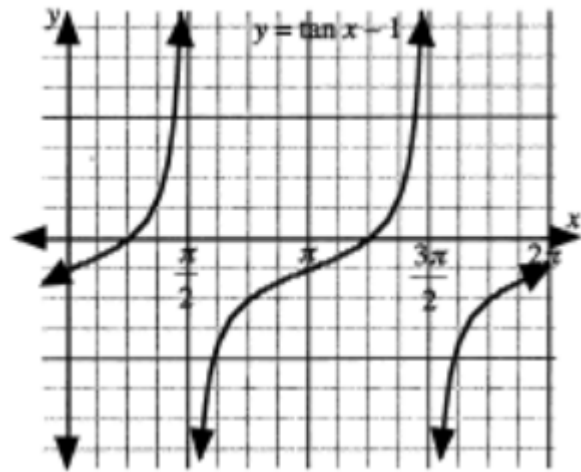


- Explain how to use the graph to determine the approximate solutions to the equation $\cos x = 0.5$, $0 \leq x \leq 2\pi$.
- Write the solutions to the equation $\cos x = 0.5$, $0 \leq x \leq 2\pi$. Give solutions as exact values.
- Write the general solution to the equation $\cos x = 0.5$.

Question #6

Reference Q.12524

The diagram shows the graph of the equation $y = \tan x - 1$ on the domain $0 \leq x \leq 2\pi$.



- Explain how to use the graph to determine the approximate solutions to the equation $\tan x = 1$, $0 \leq x \leq 2\pi$.
- Write the solutions to the equation $\tan x = 1$, $0 \leq x \leq 2\pi$. Give solutions as exact values.
- Write the general solution to the equation $\tan x = 1$.

Question #7

Reference Q.12526

Write the general solutions to the equations.

a. $\sin x = \frac{\sqrt{3}}{2}$

b. $\tan x = -1$

c. $2 \sec x - 4 = 0$

Question #8

Reference Q.12527

Determine the solution (to the nearest hundredth) to each of the following equations, defined on the domain $0 \leq x \leq 2\pi$, using a graphical approach.

a. $\cos x = 0.6$

b. $\cot x = -\frac{1}{3}$

c. $\csc x - 3 = 0$

Question #9

Reference Q.12528

Write the general solutions to the equations.

a. $\cos x = 0.6$

b. $\cot x = -\frac{1}{3}$

c. $\csc x - 3 = 0$

Question #10

Reference Q.12637

The following questions cannot be solved using an algebraic approach. Graphically determine the solution(s) on the set of real numbers to the nearest hundredth of a radian.

a. $3 \sin^2 x = x$

b. $x^2 + \sin 6x - 1 = 0$

Question #11

Reference Q.12540

Use a graphical approach to determine the roots of the equation

$$\sin 2x = \frac{\sqrt{3}}{2}$$

a. on the domain $0 \leq x \leq 2\pi$

b. on the domain of real numbers.

Question #12

Reference Q.12541

Consider the function $f(x) = 1 - \cot 2x$. Using a graphical approach, determine the zeros of the function

a. for $0 \leq x \leq 2\pi$

b. for $x \in \mathbb{R}$

Question #13

Reference Q.12542

Determine the general solution to $\cos \frac{1}{2}x = \frac{\sqrt{3}}{2}$ using a graphical approach.

Question #14

Reference Q.18042

Solve $\sqrt{3} \tan(2x - \frac{\pi}{6}) - 1 = 0$ by graphing.

