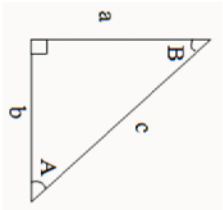


Section 6.1

#1 Points possible: 1. Total attempts: 2



Suppose $a = 5$ and $b = 4$.

Find an exact value or give at least two decimal places:

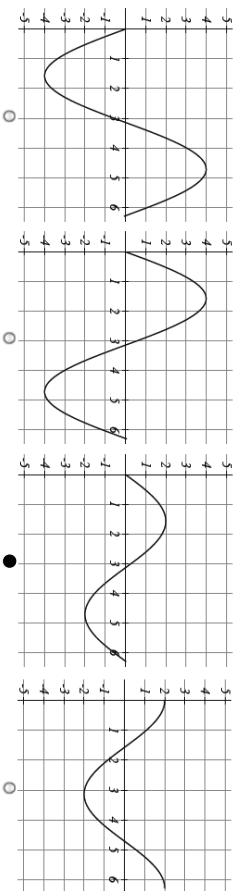
$\sin(A) =$ _____

$\cos(A) =$ _____

Note: Triangle may not be drawn to scale.

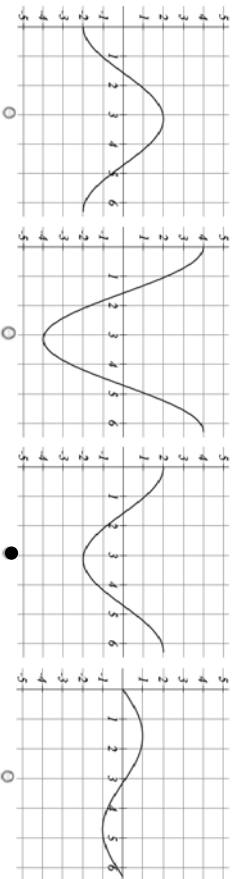
#2 Points possible: 1. Total attempts: 2

Which of the following graphs is the correct plot of $y = 2\sin(x)$?

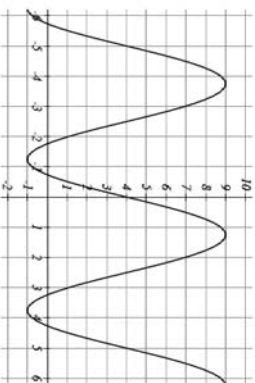


#3 Points possible: 1. Total attempts: 2

Which of the following graphs is the correct plot of $y = 2\cos(x)$?



#4 Points possible: 1. Total attempts: 2



Amplitude:

Period:

Midline: $y =$

Based on the graph above, determine the amplitude, midline, and period of the function

#5 Points possible: 1. Total attempts: 2

Given the equation $y = 4\sin(8(x+2))+7$

The amplitude is: The horizontal shift is:

The period is: The midline is: $y =$

#6 Points possible: 1. Total attempts: 2

Given the equation $y = 3\sin(6x+24)+2$

The amplitude is: The horizontal shift is:

The period is: The midline is: $y =$

#7 Points possible: 1. Total attempts: 2

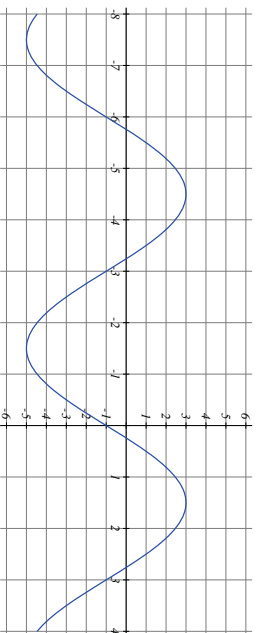
Given the equation $y = 2\sin\left(\frac{4\pi}{3}x + \frac{28\pi}{3}\right) + 8$

The amplitude is: The horizontal shift is:

The period is: The midline is: $y =$

#8 Points possible: 1. Total attempts: 2

Find a function of the form $y = A\sin(kx) + C$ or $y = A\cos(kx) + C$ whose graph matches the function shown below:



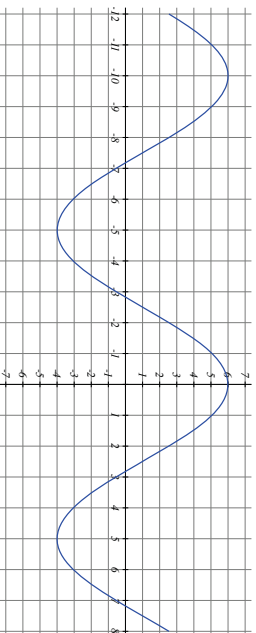
Leave your answer in exact form, if necessary, type pi for π .

$y =$ _____

$y = 4\sin\left(\frac{\pi}{3}x\right) - 1$

#9 Points possible: 1. Total attempts: 2

Find a function of the form $y = A\sin(kx) + C$ or $y = A\cos(kx) + C$ whose graph matches the function shown below:



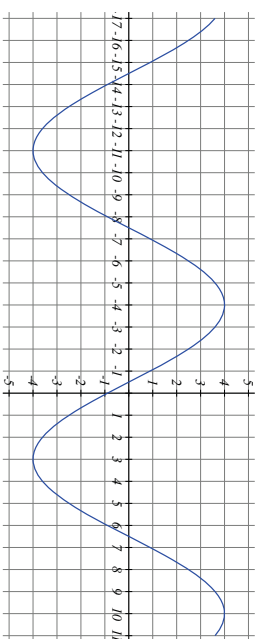
Leave your answer in exact form, if necessary, type pi for π .

$y =$ _____

$y = 5\cos\left(\frac{\pi}{5}x\right) + 1$

#10 Points possible: 1. Total attempts: 2

The curve above is the graph of a sinusoidal function. It goes through the points $(-11, -4)$ and $(3, -4)$. Find a sinusoidal function that matches the given graph. If needed, you can enter $\pi = 3.1416\dots$ as pi in your answer, otherwise use at least 3 decimal digits.



$f(x) = \frac{\pi}{7}(x-3) - 4\cos\left(\frac{\pi}{7}\right)(x-3)$

#11 Points possible: 1. Total attempts: 2

A ferris wheel is 35 meters in diameter and boarded from a platform that is 1 meters above the ground. The six o'clock position on the ferris wheel is level with the loading platform. The wheel completes 1 full revolution in 6 minutes. The function $h = f(t)$ gives your height in meters above the ground t minutes after the wheel begins to turn.

- What is the Amplitude? _____ meters
- What is the Midline? $y =$ _____ meters
- What is the Period? $y =$ _____ minutes
- How High are you off of the ground after 3 minutes? _____ meters
- 17.5
- 18.5
- 6
- 36

Section 6.2

#1 Points possible: 1. Total attempts: 2

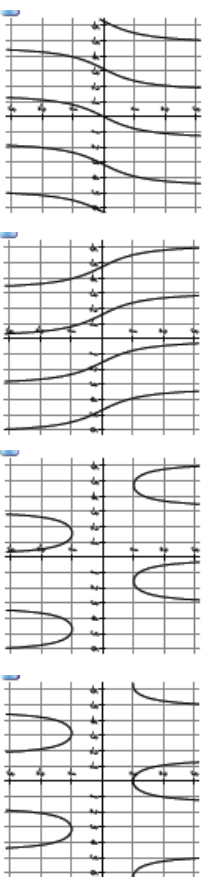
Fill in the blanks:

1. If $\tan x = 1.5$ then $\tan(-x) =$ _____
2. If $\sin x = 0.8$ then $\sin(-x) =$ _____
3. If $\cos x = 0.6$ then $\cos(-x) =$ _____
4. If $\tan x = -1.5$ then $\tan(\pi+x) =$ _____

-1.5
-0.8
0.6
-1.5

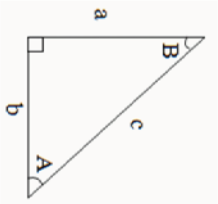
#2 Points possible: 1. Total attempts: 2

Match each graph with its equation. Not all equations will be used.



$y = \tan(x)$ $y = \cot(x)$ $y = \csc(x)$ $y = \sec(x)$

#3 Points possible: 1. Total attempts: 2



Suppose $a = 9$ and $b = 7$.

Find an exact value or give at least two decimal places:

$\sin(A) =$ _____

$\cos(A) =$ _____

$\frac{9}{\sqrt{130}}$
 $\frac{7}{\sqrt{130}}$

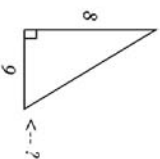
Note: Triangle may not be drawn to scale.

Section 6.3

#1 Points possible: 1. Total attempts: 2

For the right triangle below, find the measure of the angle.

Figure is not to scale.



41.6355993657 degrees

#2 Points possible: 1. Total attempts: 2

Evaluate the expression $\cos^{-1}\left(\sin\left(\frac{\pi}{6}\right)\right)$

Give your answer as an exact value

$\frac{\pi}{3}$

#3 Points possible: 1. Total attempts: 2

Evaluate $\tan\left(\sin^{-1}\left(\frac{2}{7}\right)\right)$, giving your answer as an exact value (no decimals)

$\frac{3}{\sqrt{40}}$

#4 Points possible: 1. Total attempts: 2

Find a simplified expression for $\sin\left(\tan^{-1}\left(\frac{t}{5}\right)\right)$

$\frac{t}{\sqrt{25+t^2}}$

Section 6.4

Name: Neal Nelson

Show Scored View

#1 Points possible: 1. Total attempts: 2

Find all solutions to $2\sin(\theta) = -1$ on the interval $0 \leq \theta < 2\pi$

$\theta =$ _____

Give your answers as exact values, as a list separated by commas.

$\frac{7\pi}{6}, \frac{11\pi}{6}$

#2 Points possible: 1. Total attempts: 2

Find all solutions to $2\cos(\theta) = -\sqrt{2}$ on the interval $0 \leq \theta < 2\pi$

$\theta =$ _____

Give your answers as exact values, as a list separated by commas.

$\frac{3\pi}{4}, \frac{5\pi}{4}$

#3 Points possible: 1. Total attempts: 2

Solve $8\sin(6x) = 5$ for the two smallest positive solutions A and B, with $A < B$

A = _____

B = _____

Give your answers accurate to at least two decimal places.

0.11252192215617

0.41407685344213

#4 Points possible: 1. Total attempts: 2

Solve $6\cos(2x) = 4$ for the smallest three positive solutions.

Give your answers accurate to at least two decimal places, as a list separated by commas

0.420534335283972, 7.7210583183058, 3.5621269888738



Section 6.5

#1 Points possible: 1. Total attempts: 2

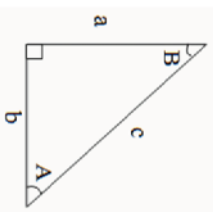
Suppose $a = 5$ and $c = 7$.

Find:

$b =$

$A =$

$B =$



Note: Triangle may not be drawn to scale.

Give all answers to at least one decimal place.
Give angles in **degrees**

#2 Points possible: 1. Total attempts: 2

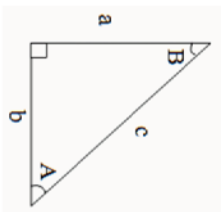
Suppose $a = 2$ and $b = 9$.

Find:

$c =$

$A =$

$B =$



Note: Triangle may not be drawn to scale.

Give all answers to at least one decimal place.
Give angles in **degrees**

#3 Points possible: 1. Total attempts: 2

Find a possible formula for the trigonometric function whose values are in the following table.

x	0	1	2	3	4	5	6
y	2	-1	2	5	2	-1	2

$$y = \frac{3 \cdot \sin\left(\frac{\pi}{2}(x-2)\right) + 2}{}$$

#4 Points possible: 1. Total attempts: 2

Outside temperature over a day can be modeled as a sinusoidal function. Suppose you know the high temperature of 71 degrees occurs at 6 PM and the average temperature for the day is 60 degrees. Find the temperature, to the nearest degree, at 8 AM.

50.4732205538374 degrees

#5 Points possible: 1. Total attempts: 2

Outside temperature over a day can be modeled as a sinusoidal function. Suppose you know the temperature varies between 32 and 68 degrees during the day and the average daily temperature first occurs at 8 AM. How many hours after midnight, to two decimal places, does the temperature first reach 41 degrees?

6 hours

#6 Points possible: 1. Total attempts: 2

A Ferris wheel is 45 meters in diameter and boarded from a platform that is 4 meters above the ground. The six o'clock position on the Ferris wheel is level with the loading platform. The wheel completes 1 full revolution in 10 minutes. How many minutes of the ride are spent higher than 29 meters above the ground?

4.6455905439754 minutes