

Math Problem Set 5**Name: Neal Nelson**[Show Scored View](#)

#1 Points possible: 1. Total attempts: 2

(a) The angle between 0° and 360° that is coterminal with the 639° angle is _____ degrees.(b) The angle between 0° and 360° that is coterminal with the -81° angle is _____ degrees.

279

279

#2 Points possible: 1. Total attempts: 2

The angle between 0 and 2π in radians that is coterminal with the angle $\frac{13}{2}\pi$ in radians is_____ .
 $\frac{1}{2}\pi$

#3 Points possible: 1. Total attempts: 2

(a) In a circle of radius 5 miles, the length of the arc that subtends a central angle of 1 radians is _____ miles.

(b) On a circle of radius 7 feet, what angle would subtend an arc of length 4 feet?

_____ degrees

5

32.74

#4 Points possible: 1. Total attempts: 2

Find the area of the sector of a circle with radius 4 yards formed by a central angle of 145° :

_____ square yards

Round your answer to two decimal places.

20.25 square yards

#5 Points possible: 1. Total attempts: 2

From the information given, find the quadrant in which the terminal point determined by t lies. Input I, II, III, or IV.(a) $\sin(t) < 0$ and $\cos(t) < 0$, quadrant _____ ;(b) $\sin(t) > 0$ and $\cos(t) < 0$, quadrant _____ ;(c) $\sin(t) > 0$ and $\cos(t) > 0$, quadrant _____ ;(d) $\sin(t) < 0$ and $\cos(t) > 0$, quadrant _____ ;

III

II

I

IV

#6 Points possible: 1. Total attempts: 2

The point P is on the unit circle. If the y -coordinate of P is $\frac{2}{7}$, and P is in quadrant II, then $x =$ _____
-0.96

#7 Points possible: 1. Total attempts: 2

Without using a calculator, compute the sine and cosine of 330° by using the reference angle.

What is the reference angle? _____ degrees.

In what quadrant is this angle? _____ (answer 1, 2, 3, or 4)

 $\sin(330^\circ) =$ _____ $\cos(330^\circ) =$ _____(Type **sqrt(2)** for $\sqrt{2}$ and **sqrt(3)** for $\sqrt{3}$.)

30

4

 $-\frac{1}{2}$ $\frac{\sqrt{3}}{2}$ $\frac{\sqrt{3}}{2}$

#8 Points possible: 1. Total attempts: 2

Without using a calculator, compute the sine and cosine of $\frac{4\pi}{3}$ by using the reference angle.

What is the reference angle? _____ radians.

In what quadrant is this angle? _____ (answer **1, 2, 3, or 4**)

$$\sin\left(\frac{4\pi}{3}\right) = \underline{\hspace{2cm}}$$

$$\cos\left(\frac{4\pi}{3}\right) = \underline{\hspace{2cm}}$$

(Type **sqrt(2)** for $\sqrt{2}$ and **sqrt(3)** for $\sqrt{3}$.)

$$\frac{\pi}{3}$$

$$3$$

$$-\frac{\sqrt{3}}{2}$$

$$-\frac{1}{2}$$

#9 Points possible: 1. Total attempts: 2

If $\theta = \frac{-5\pi}{6}$, then

$$\sin(\theta) = \underline{\hspace{2cm}}$$

$$\cos(\theta) = \underline{\hspace{2cm}}$$

Give exact values. No decimals allowed!

Example: Enter $\text{sqrt}(2)/2$ for $\frac{\sqrt{2}}{2}$. With functions like sqrt, be sure to use function notation

(parentheses). $\text{sqrt}(2)/2$ will work, but $\text{sqrt}2/2$ will not.

$$-\frac{1}{2}$$

$$-\frac{\sqrt{3}}{2}$$

#10 Points possible: 1. Total attempts: 2

If $\theta = \frac{-1\pi}{3}$, then

$$\sin(\theta) = \underline{\hspace{2cm}}$$

$$\cos(\theta) = \underline{\hspace{2cm}}$$

Give exact values. No decimals allowed!

$$-\frac{\sqrt{3}}{2}$$

$$\frac{1}{2}$$

#11 Points possible: 1. Total attempts: 2

If $\theta = \frac{1\pi}{4}$, then

$$\sin(\theta) = \underline{\hspace{2cm}}$$

$$\cos(\theta) = \underline{\hspace{2cm}}$$

Give exact values. No decimals allowed!

$$\frac{\sqrt{2}}{2}$$

$$\frac{\sqrt{2}}{2}$$

#12 Points possible: 1. Total attempts: 2

If $\cos(\theta) = \frac{2}{3}$ and θ is in the 4th quadrant, find $\sin(\theta)$

$$\sin(\theta) = \underline{\hspace{2cm}}$$

Give exact values using fractions and the sqrt() function.

$$-\frac{\sqrt{5}}{3}$$

#13 Points possible: 1. Total attempts: 2

(a) Find an angle θ with $0^\circ < \theta < 360^\circ$ that has the same:

Sine as 30° : $\theta =$ _____ degrees

Cosine as 30° : $\theta =$ _____ degrees

(b) Find an angle θ with $0^\circ < \theta < 360^\circ$ that has the same:

Sine function value as 240°
 $\theta =$ _____ degrees

Cosine function value as 240°
 $\theta =$ _____ degrees

150
 330
 300
 120

#14 Points possible: 1. Total attempts: 2

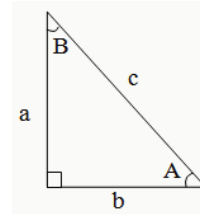
Find the coordinates of a point on a circle with radius 30 corresponding to an angle of 275°

$(x,y) =$ (_____ , _____)

Round your answers to three decimal places.

2.615
 -29.886

#15 Points possible: 1. Total attempts: 2



Note: Triangle may not be drawn to scale.

Suppose $a = 3$ and $b = 10$.

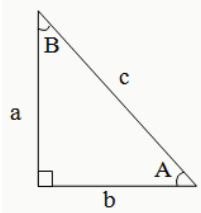
Find an exact value or give at least two decimal places:

$\sin(A) =$ _____

$\cos(A) =$ _____

0.29
 0.96

#16 Points possible: 1. Total attempts: 2



Note: Triangle may not be drawn to scale.

Suppose $a = 12$ and $A = 50$ degrees.

Find:

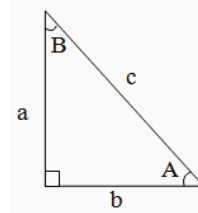
 $b =$ _____ $c =$ _____ $B =$ _____ degreesGive all answers to at least one decimal place. Give angles in **degrees**

10.07

15.67

40

#17 Points possible: 1. Total attempts: 2



Note: Triangle may not be drawn to scale.

Suppose $c = 7$ and $A = 15$ degrees.

Find:

 $a =$ _____ $b =$ _____ $B =$ _____ degreesGive all answers to at least one decimal place. Give angles in **degrees**

1.81

6.76

75

#18 Points possible: 1. Total attempts: 2

A 17-ft ladder leans against a building so that the angle between the ground and the ladder is 82° .

How high does the ladder reach on the building? _____ ft

16.83

#19 Points possible: 1. Total attempts: 2

The angle of elevation to the top of a Building in New York is found to be 2 degrees from the ground at a distance of 2 miles from the base of the building. Using this information, find the height of the building. Round to the tenths. Hint: 1 mile = 5280 feet

Your answer is _____ feet.

368.8

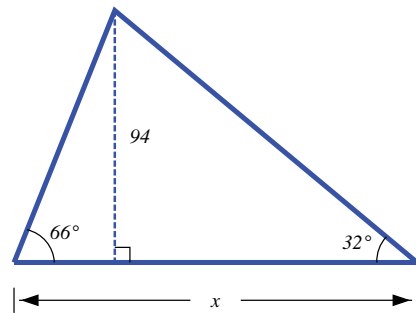
#20 Points possible: 1. Total attempts: 2

A radio tower is located 300 feet from a building. From a window in the building, a person determines that the angle of elevation to the top of the tower is 24° and that the angle of depression to the bottom of the tower is 23° . How tall is the tower?

_____ feet
260.91

#21 Points possible: 1. Total attempts: 2

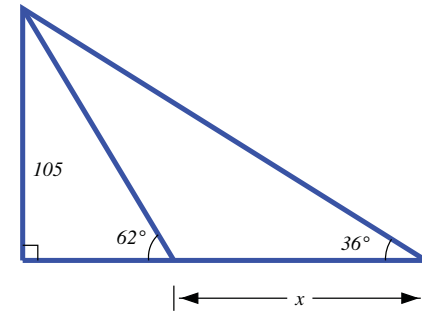
Find x correct to 2 decimal places.
NOTE: The triangle is NOT drawn to scale.



$x =$ _____
 $\tan(32^\circ) = \frac{94}{x_1}$ & $\tan(66^\circ) = \frac{94}{x_2}$ & $x = x_1 + x_2 = 192.28$

#22 Points possible: 1. Total attempts: 2

Find x correct to 2 decimal places.
NOTE: The triangle is NOT drawn to scale.



$x =$ _____
 $\tan(36^\circ) = \frac{105}{x_2}$ & $\tan(62^\circ) = \frac{105}{x_1}$ & $x = x_2 - x_1 = 88.69$