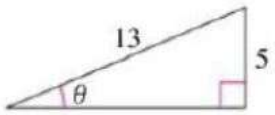
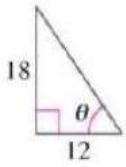
STATION 1

Find the exact values of the six trigonometric functions of the angle θ shown in the figure.

1.



2.



STATION 2

Sketch a right triangle corresponding to the trigonometric function of the acute angle θ. Then find the other five trigonometric functions of θ.

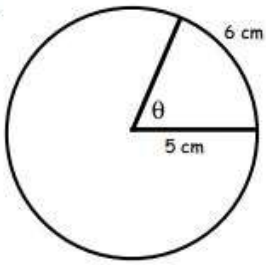
3. $\cot\theta = 5$

4. $\cos\theta = \frac{3}{7}$

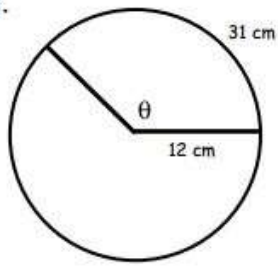
STATION 3

Find the angle in radians.

1.

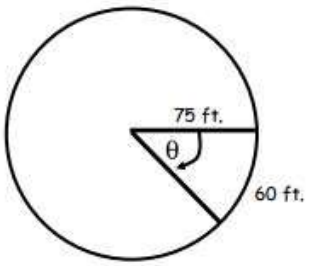


2.



3. radius is 7 meters
arc length is 32 meters

4.



STATION 4

Find the length of the arc.

5. radius is 14 inches
central angle θ is 180°

6. radius is 12 centimeters
central angle θ is $\frac{3\pi}{4}$

Find the radius.

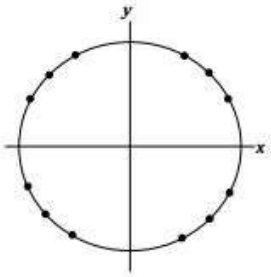
7. arc length is 36 feet
central angle θ is $\frac{\pi}{2}$

8. arc length is 82 miles
central angle θ is 135°

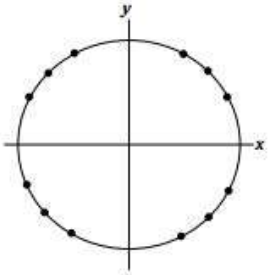
STATION 5

Use the blank unit circle to mark the angle and then label the point. Then evaluate (if possible) the sine, cosine, and tangent of the real number *t*.

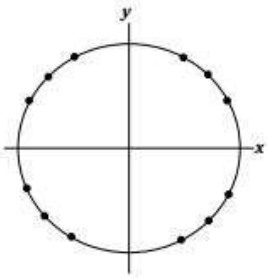
7. $t = \frac{7\pi}{6}$



8. $t = \frac{2\pi}{3}$



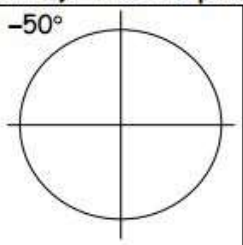
9. $t = -\frac{5\pi}{3}$



STATION 6

Draw each angle in standard position (initial & terminal sides). Determine the reference angle (if it's not quadrantal). Find one positive and one negative angle that is coterminal to each angle (answers may vary).

1. $-50°$

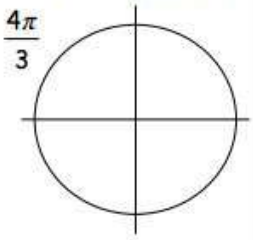


Ref. ∠ = _____

Coterminal ∠s:

_____

2. $\frac{4\pi}{3}$

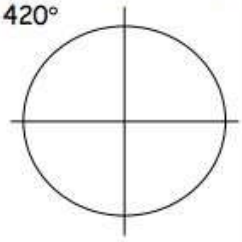


Ref. ∠ = _____

Coterminal ∠s:

_____

3. $420°$

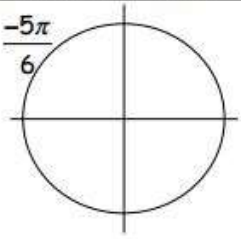


Ref. ∠ = _____

Coterminal ∠s:

_____

4. $\frac{-5\pi}{6}$



Ref. ∠ = _____

Coterminal ∠s:

_____

STATION 7

CALCULATOR

Rewrite each angle in radian measure in the following ways:

a) in terms of π

b) the rounded decimal equivalent (round three decimal places)

34. $145°$ **a)** **b)**	**35.** $-80°$ **a)** **b)**	**36.** $-350°$ **a)** **b)**	**37.** $58°$ **a)** **b)**

Rewrite each angle in degree measure. Round three decimal places when needed.

38. $\frac{6\pi}{5}$	**39.** $-\frac{4\pi}{3}$	**40.** 5π	**41.** 5

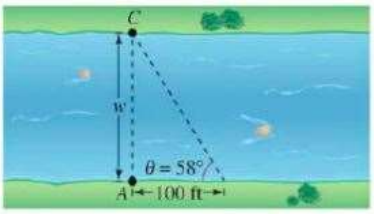
STATION 8

Answer the following. Provide an exact value (in terms of π) and decimal value (rounded to three places).

50. An arc of a circle has a central angle measure of $330°$ and a length of 15 feet. Find the length of a radius of the circle.	**51.** Find the length of an arc of a circle with a radius of 25 cm and a central angle measure of $\frac{3\pi}{7}$.	**52.** Find the measure of a central angle of an arc if its length is 10 meters and the radius is 2 meters.

STATION 9

21. A biologist wants to know the width w of a river (see figure) in order to properly set instruments for studying the pollutants in the water. From point A, the biologist walks downstream 100 feet and sights to point C. From the sighting, it is determined that $\theta = 58°$. How wide is the river? Round your answer to three decimal places.



STATION 10

24. Find the 6 trigonometric function values for the point $(7,-24)$ on the terminal side of angle θ.

$\sin\theta =$ $\quad$ $\csc\theta =$

$\cos\theta =$ $\quad$ $\sec\theta =$

$\tan\theta =$ $\quad$ $\cot\theta =$

25. Given that $\cos\theta = -\frac{12}{13}$ and $\sin\theta > 0$, find the exact values of the other five trig. functions.

$\sin\theta =$ $\quad$ $\csc\theta =$

$\cos\theta = -\frac{12}{13}$ $\quad$ $\sec\theta =$

$\tan\theta =$ $\quad$ $\cot\theta =$