1. Find the measure of an angle from $0°$ to $360°$ or 0 to 2π that is coterminal to the given angle. Give your answer in the same form as the original angle.

a) $-2375°$ b) $\frac{43\pi}{7}$ c) $8972°$ d) $\frac{-87\pi}{12}$

2. Convert each angle measure into the other unit of measure. Give answers in degrees to the nearest hundredth and answers in radians in terms of π and as a reduced fraction.
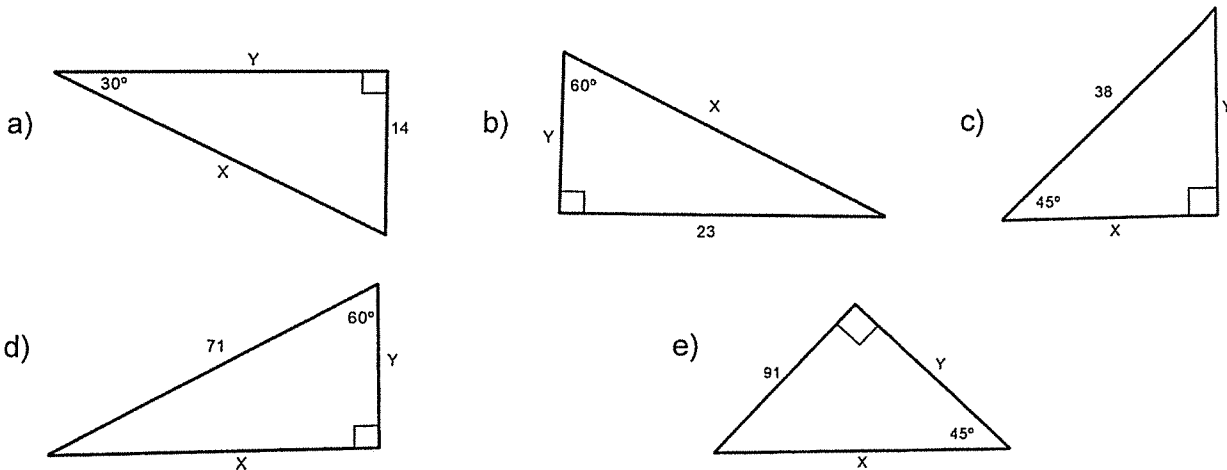
a) $345°$ b) $\frac{47\pi}{25}$

3. Use the Unit Circle to find the EXACT value of each.

a) $\text{Tan}\frac{29\pi}{6}$ b) $\text{Cos}\frac{-39\pi}{4}$ c) $\text{Sin}1680°$

d) $\text{Tan}\frac{-19\pi}{2}$ e) $\text{Sin}\frac{22\pi}{3}$ f) $\text{Cos}(-2850°)$

4. Find the EXACT value of x and y in each triangle.

a)

b)

c)

d)

e)

5. You're on the top of a 50ft tall building and see your dog on the ground with an angle of depression of $37°$. Find the distance your dog is from the building to the nearest tenth of a foot.

6. A tree has fallen against a building. The trunk of the tree makes a $52°$ with the ground. If the trunk of the tree is 30 feet from the building find the height of the end of the tree that is resting on the building to the nearest whole foot.

7. A wire to hold up a 60 foot tall telephone pole is attached to the top of the pole and anchored into the ground 75 feet from the base of the pole. Find the angle the wire makes with the ground to the nearest tenth of a degree.

8. You are on the ground and see a rare bird in a tree with an angle of elevation of 63°. If you are 28 feet from the tree find how high up in the tree the bird is perched to the nearest hundredth of a foot.
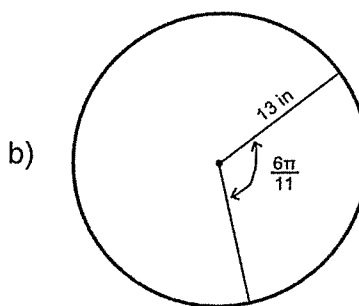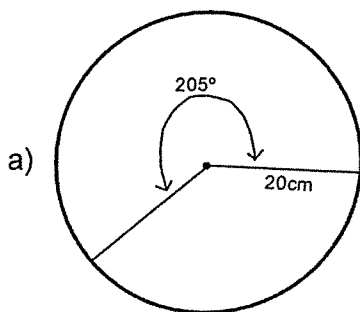
9. State in which Quadrant or on which axis the terminal side of each angle is located.
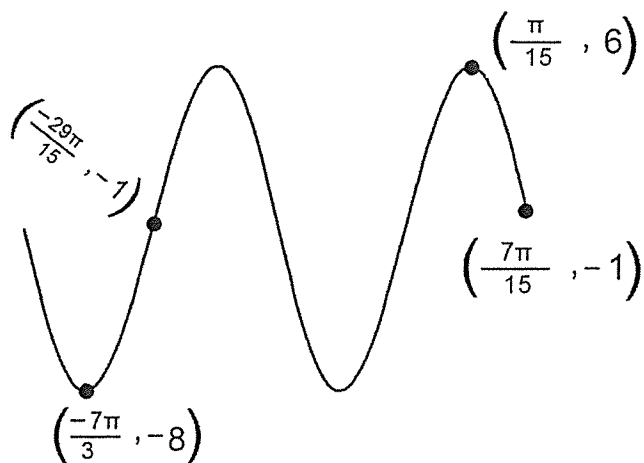a) $\frac{30\pi}{4}$ b) $-1503°$ c) $\frac{64\pi}{7}$ d) $2520°$ e) $\frac{-89\pi}{9}$

10. Find the value of x in each triangle to the nearest tenth.

a)

x

23°

17

b)

42

52°

X

c)

X

103

88
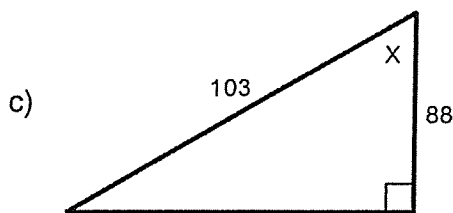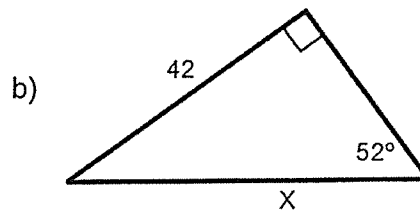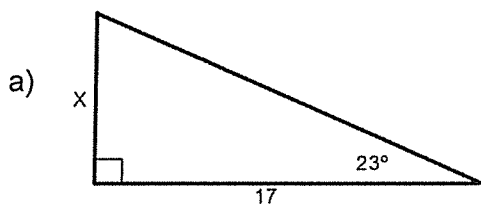
11. Find the arc length for each indicated angle. Round to the nearest hundredth.

a)

205°

20cm

b)

13 in

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

1. Write both a Sin and Cos equation for this graph.

$\left(\frac{\pi}{15}, 6\right)$

$\left(\frac{-29\pi}{15}, -1\right)$

$\left(\frac{7\pi}{15}, -1\right)$

$\left(\frac{-7\pi}{3}, -8\right)$

2. Graph one period of this function. Label the coordinates of all max's, min's, and pts on the midline.

$$y = -5\text{Cos}(11(x - \frac{3\pi}{4})) + 13$$

3. Given the periodic function below state the amplitude, period, and equation of the midline.
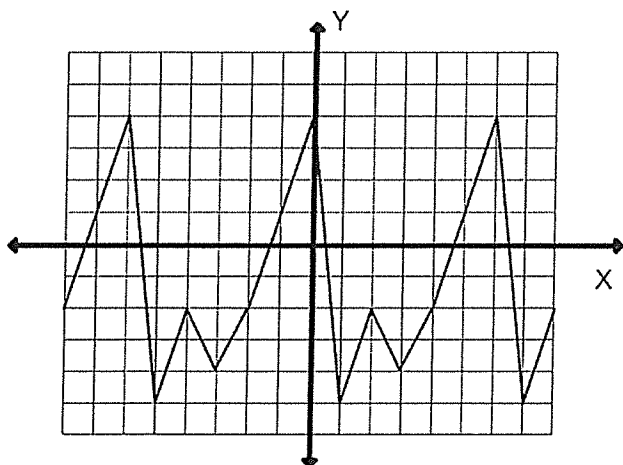
Amplitude =

EQ of Midline:

Period =

4. Give 5 x-intercepts and 5 VA for this Tangent Function: $\text{Tan}\frac{13x}{8}$

5. Write the equation of each Tangent Graph.

a) Window is from 0 to 9π

b) Window is from 0 to $\frac{7\pi}{3}$