

A

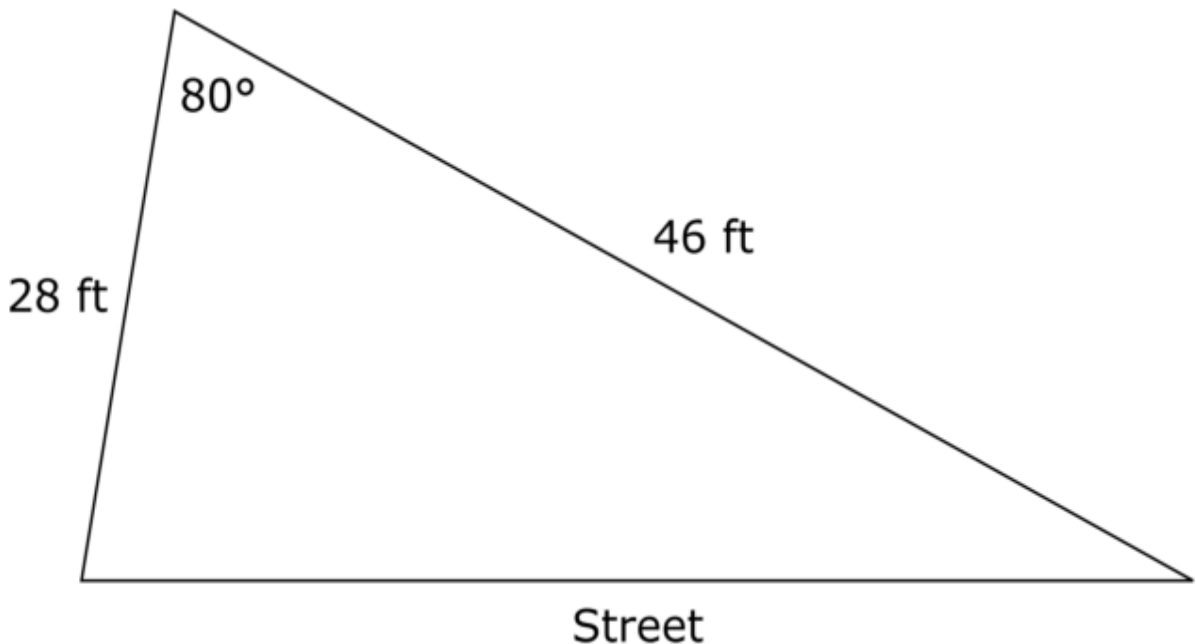
$$y = 3\sin(2x) + 1$$

A great white shark swims 22 feet below sea level. If the shark is 67.7 feet from a sailboat, what is the angle of depression from the boat to the shark?

B

18.96

**Find the area of
the plot of land
shown below.**



C

43.13

From a point 100 feet from the base of a building, Angelica looks up at a 40 degree angle to the top of the building. She walks 20 feet closer. At what angle must Angelica now look up to see the top of the building?

D

11.21

Find the
amplitude,
period, and
midline of

$$y = -3\cos(2x) + 1$$

E

164.10

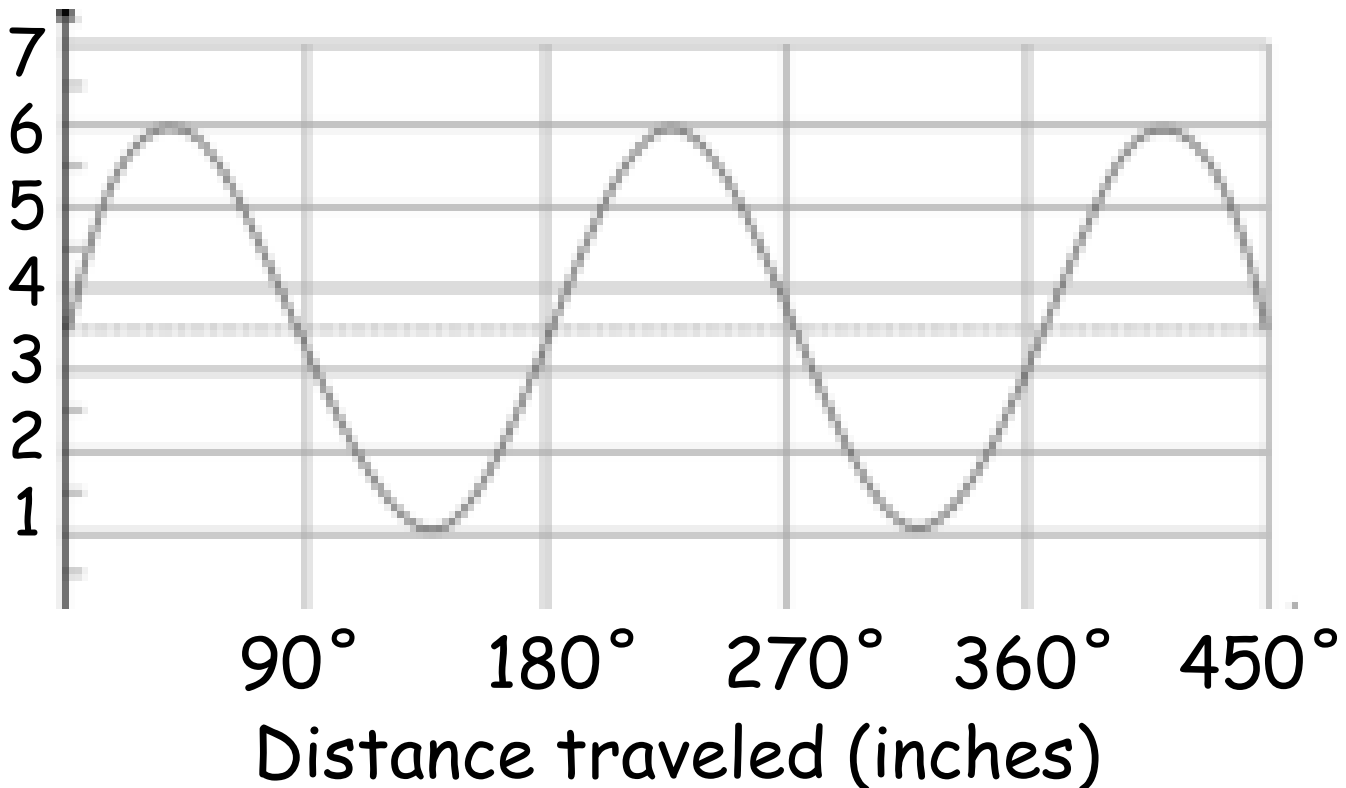
A new type of LED bicycle light can be attached to the spokes of the front wheel.

When the bicycle moves at constant speed, a person

from the side would see the light following the pattern shown. What is the equation of the graph shown?

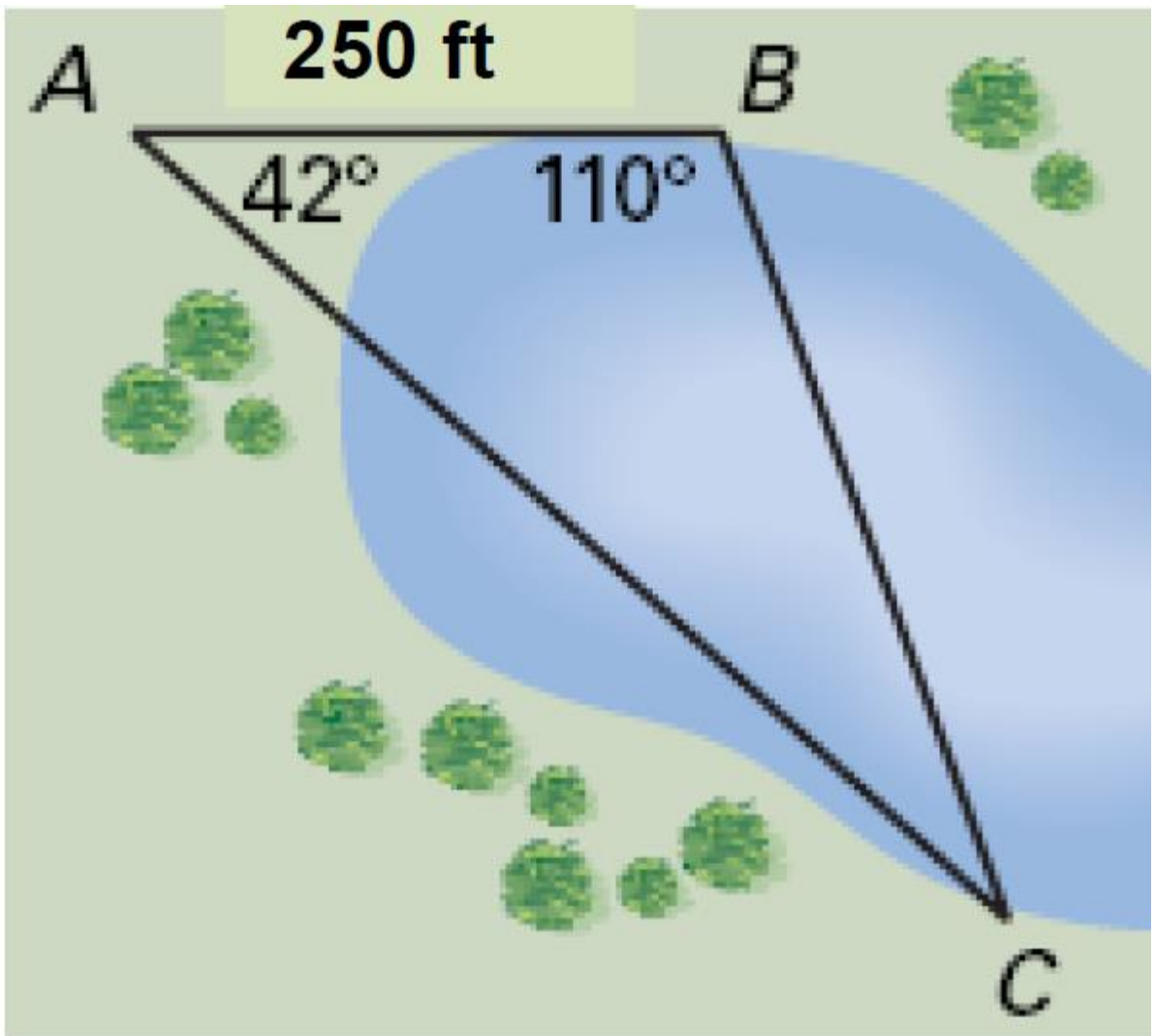


Safety Light Motion



F**41.77**

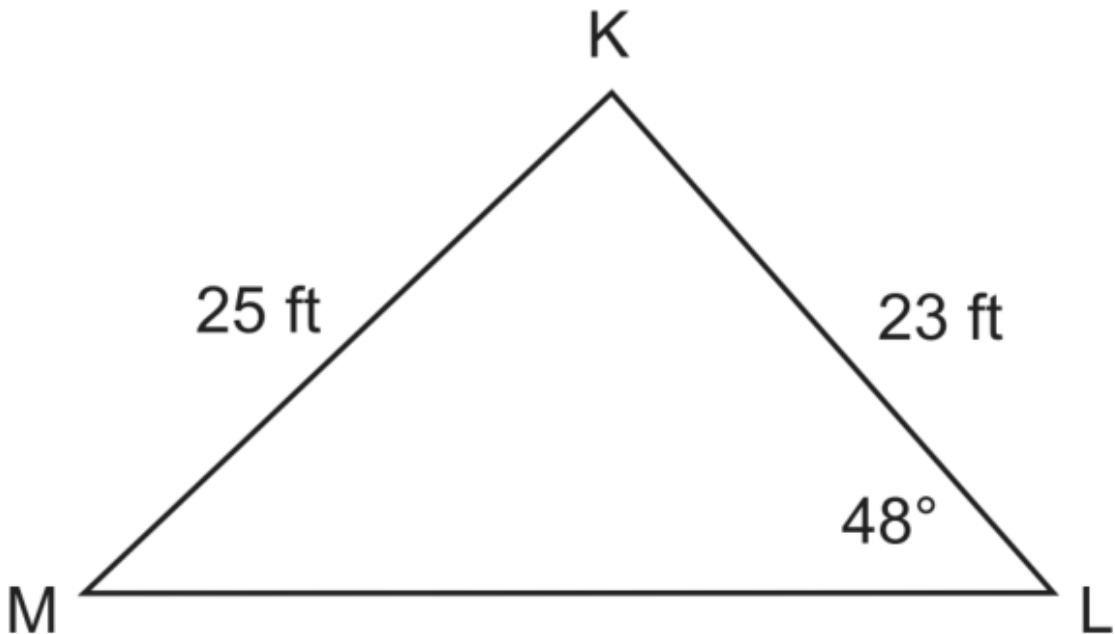
Find the length
across the lake (BC).



G

634.22

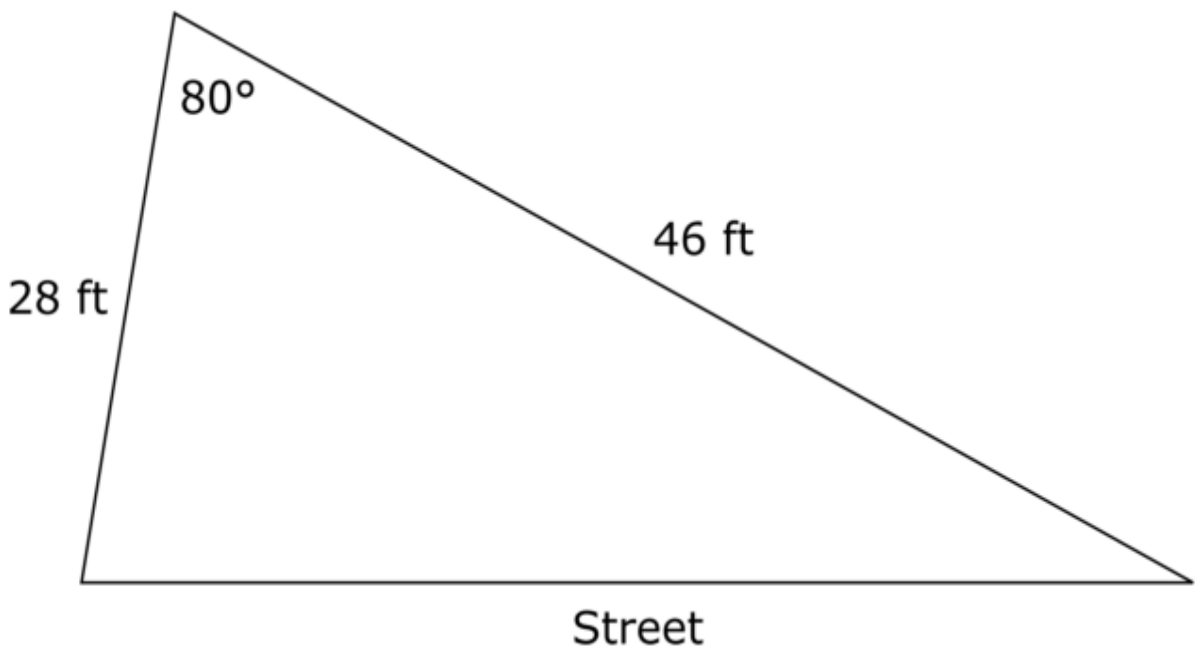
What is the
measure of angle M?



H

31.18

Suppose that for each foot of land along the street, the annual tax is \$25 per foot. How much is the annual tax for the plot?



I

46.37

The short leg of a right triangle is 10 meters and the acute angles of the triangle are 25 degrees and 65 degrees. What is the measure of the longer leg of the triangle?

J

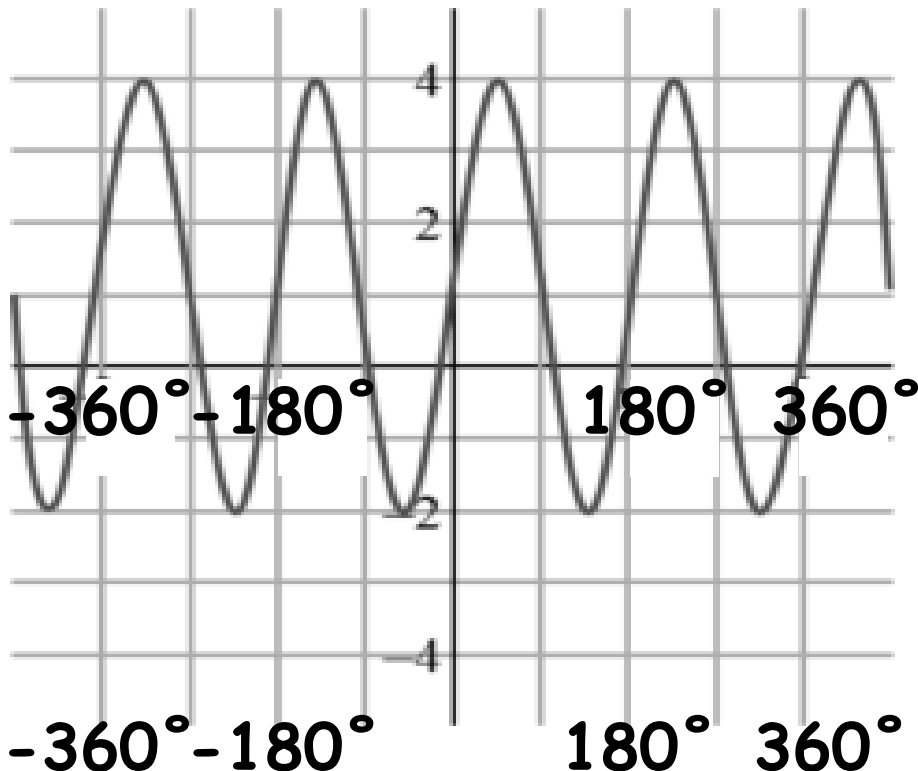
3, 180° , $y=1$

Find the
amplitude,
period, and
midline for

$$y = \sin\left(\frac{1}{2}x\right) - 3$$

K**30**

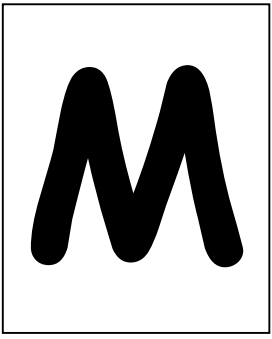
Write the equation of the following trig function.



L

1, 720° , $y = -3$

Given a triangle with
 $a = 5$, $b = 7$, and
 $c = 10$, find the
largest angle.



111.80

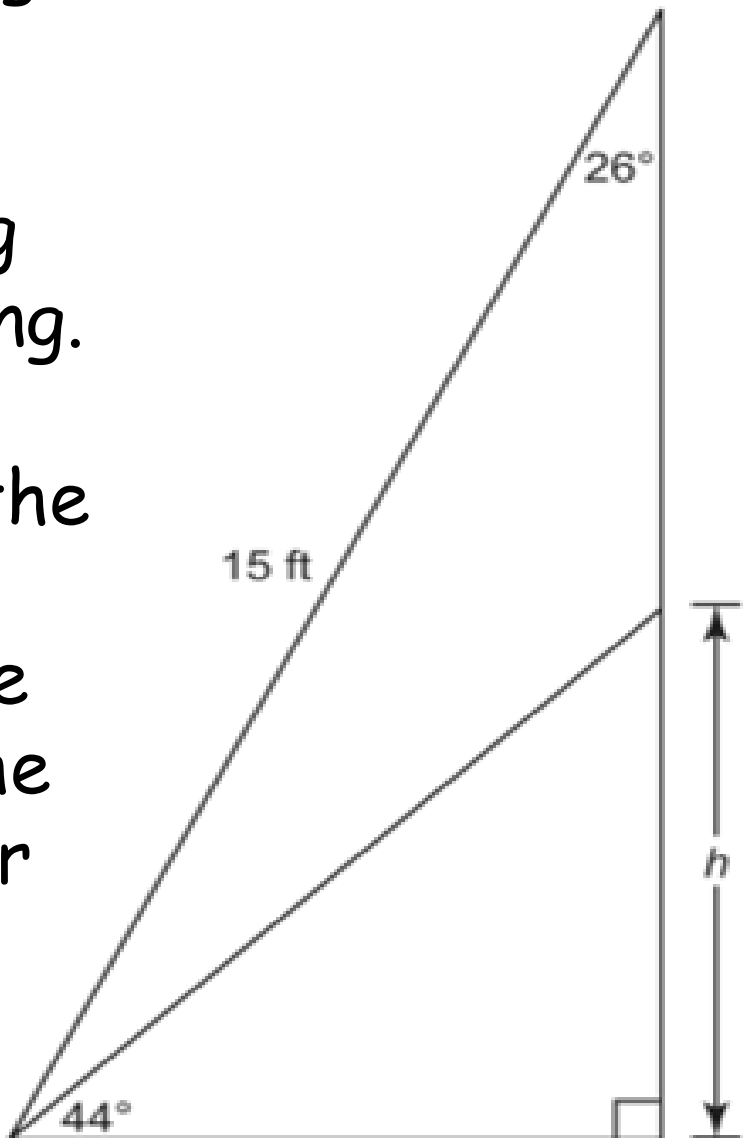
Suppose you hold a kite 5 feet off the ground at an angle of elevation of 45 degrees. If you let out 225 feet of string, how high above the ground is the kite?

N

30, 90

The hypotenuse of each right triangle shown below represents a ladder leaning against a building.

Find h , the distance from the base of the building to the point where the shorter ladder touches the building.

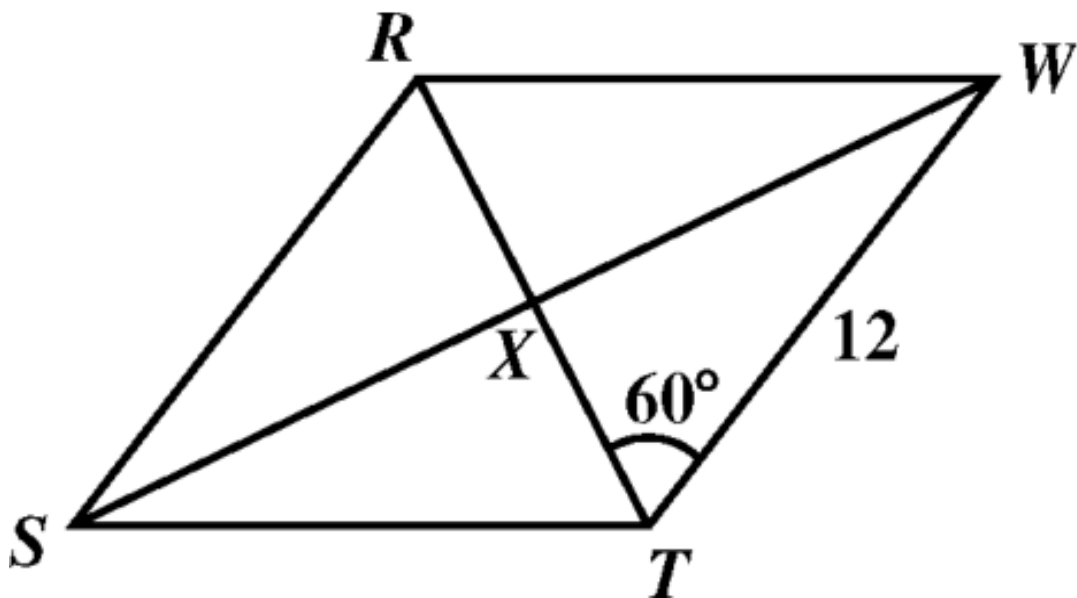


0

$$y =$$

$$2.5\sin(2x) + 3.5$$

If $RSTW$ is a rhombus, what is the area of triangle WXT ? *Hint: Remember diagonals of a rhombus are perpendicular.*



P

356.32

If

$$2\sin(\theta) + 2 = 3,$$

what are the
value(s) of θ ,

given

$$0^\circ \leq \theta \leq 180^\circ ?$$

Q

6.35

A bird flies from the top of a 40 foot utility pole on a straight course to the top of a post eight feet tall. If the angle of depression from the utility pole to the post is 50 degrees, how far did the bird fly?

R

1238.11

Given

$$\cos(x) = 2\sin(x)\cos(x),$$

what are the

value(s) of x , given

$$0^\circ \leq x \leq 180^\circ ?$$

S

15

James is standing 10 meters away from Samantha. A bird is located in the sky at a point between where James and Samantha are standing.

James is looking up at the bird at an angle of elevation of 74 degrees. Samantha is looking up at the bird at an angle of elevation of 47 degrees. How far away is the bird from Samantha?

T

21.45

If

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

what are the value(s)
of x , given
 $0^\circ \leq x \leq 180^\circ$?

N, Q, F, P, K, A, B, G, C, I, T, S,
D, J, L, M, E, O, H, R