



View hints



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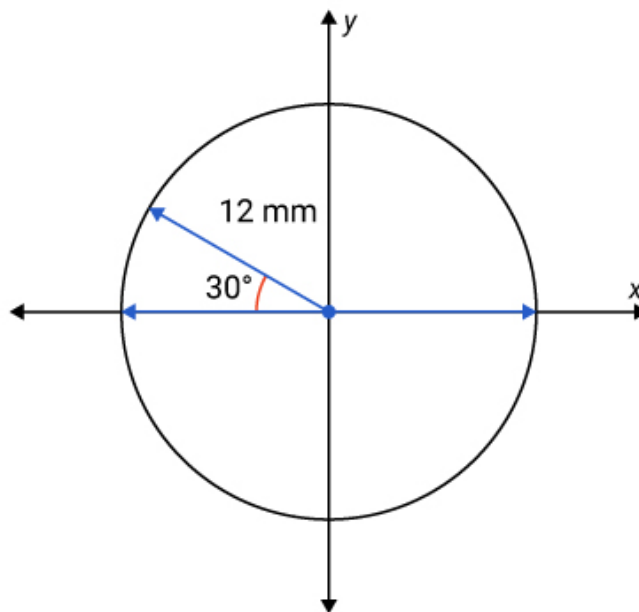
## QUESTION 1



*Drag and drop the correct answer into the space(s) provided.*

The hand on a stopwatch has a radius of 12 millimeters. When the stopwatch is stopped, the angle formed with the horizontal is  $30^\circ$ . What are the coordinates of the end of the hand? Assume that the center of the stopwatch has coordinates  $(0, 0)$ .

Find the exact coordinates of the end of the hand.



The coordinates of the end of the hand are

$(-6\sqrt{3}, 6)$



$(6, -6\sqrt{3})$

$(6\sqrt{3}, -6)$

$(-12\sqrt{3}, 12)$

## QUESTION 2



*Choose the correct answer from the drop-down menu.*

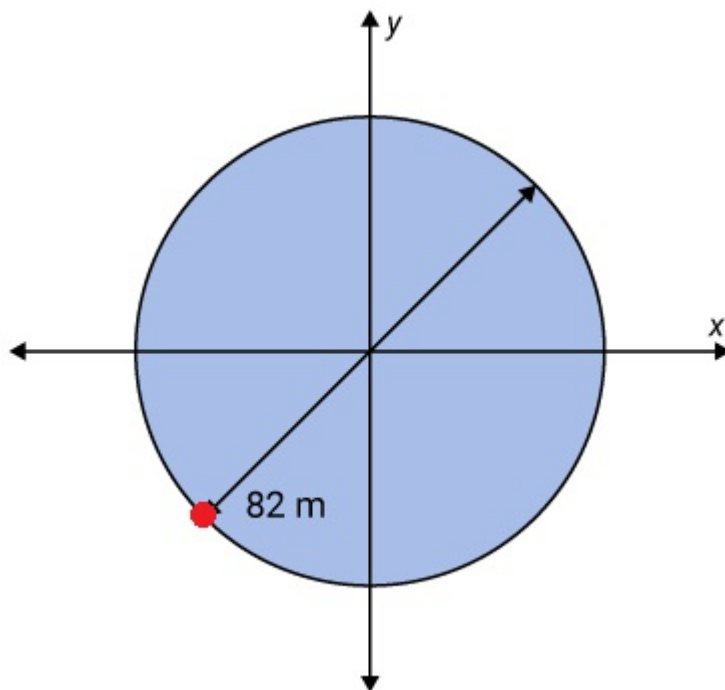
An observation wheel has an 82-meter diameter. The cars on the wheel rotate clockwise. One car is moving up and is  $45^\circ$  below where it would be if it were horizontal.

What are the coordinates of the car?

Assume that the center of the wheel has coordinates

$(0, 0)$

Find the exact coordinates of the car on the observation wheel.



$\cos \theta$

☒

$\sin \theta$

☒

The coordinates of the car on the observation wheel are

☒

### QUESTION 3



*Choose the correct answer from the drop-down menu.*

An 8-meter long pendulum swings to the right to reach its highest point. The angle of the pendulum is  $60^\circ$  below where it would be if it were horizontal. What are the coordinates of the end of the pendulum? Assume that the pivot point has coordinates  $(0, 0)$ .

Determine the exact coordinates of the end of the pendulum.

$\cos \theta$ 

&gt;



0 and

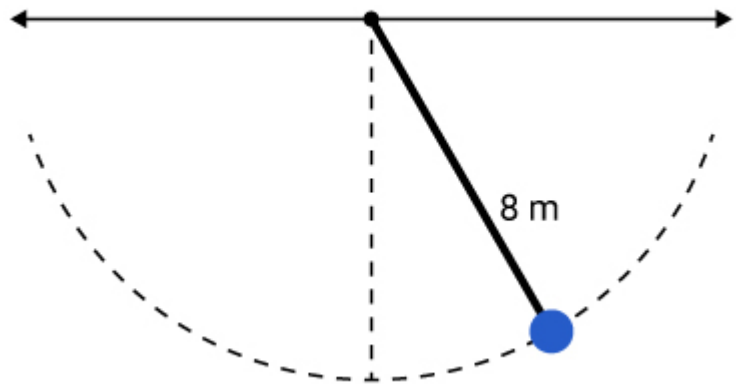
 $\sin \theta$ 

&lt;



0.

The coordinates of the end of the pendulum are

 $(4, -4\sqrt{3})$ 

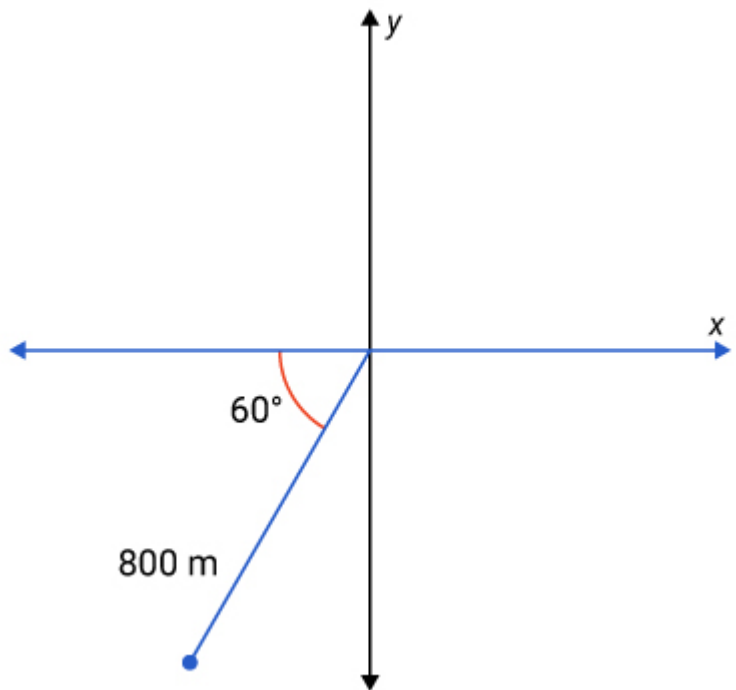
## QUESTION 4



*Select the correct option.*

A hiker is looking at a map to find the location of a cabin. The cabin is 800 meters from the hiker. The position of the cabin forms an angle with the horizontal that is  $60^\circ$ . Let the position of the hiker be  $(0, 0)$ .

Calculate the exact coordinates of the cabin.

 $(-400\sqrt{3}, -400)$

☒  $(-400, -400\sqrt{3})$



☐  $(-800\sqrt{3}, -800)$

☐  $(-800, -800\sqrt{3})$

### QUESTION 5

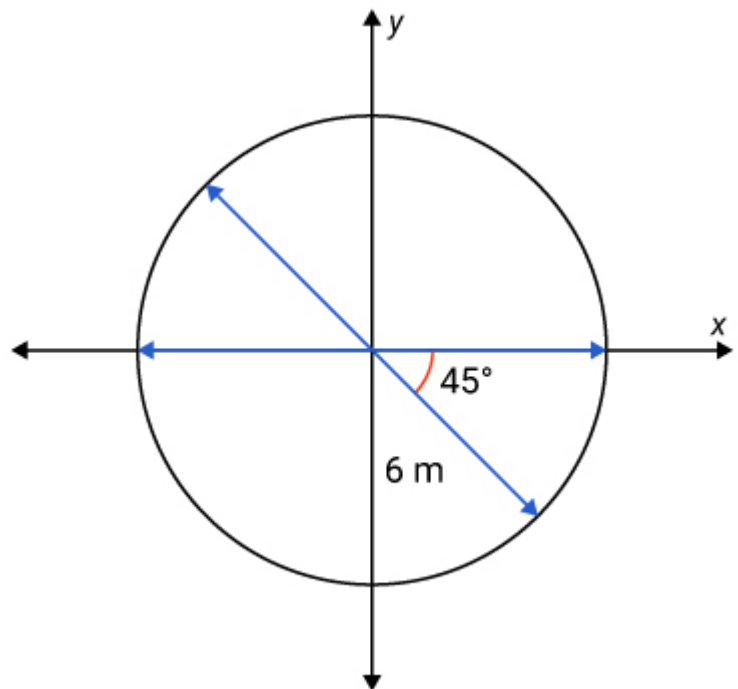


*Select the correct option.*

A sprinkler sprays water in a circular pattern. The diameter of the circular region is 6 meters. When the sprinkler is turned on, the spray forms an angle below the horizontal by  $45^\circ$ . (See figure)

Assume that the center of the sprinkler has coordinates  $(0, 0)$ .

What are the exact coordinates of the end of the spray?



☐  $(3\sqrt{2}, -3\sqrt{2})$

☐  $(6\sqrt{2}, -6\sqrt{2})$

☐  $(-3\sqrt{2}, -3\sqrt{2})$

☒  $\left(\frac{3\sqrt{2}}{2}, -\frac{3\sqrt{2}}{2}\right)$



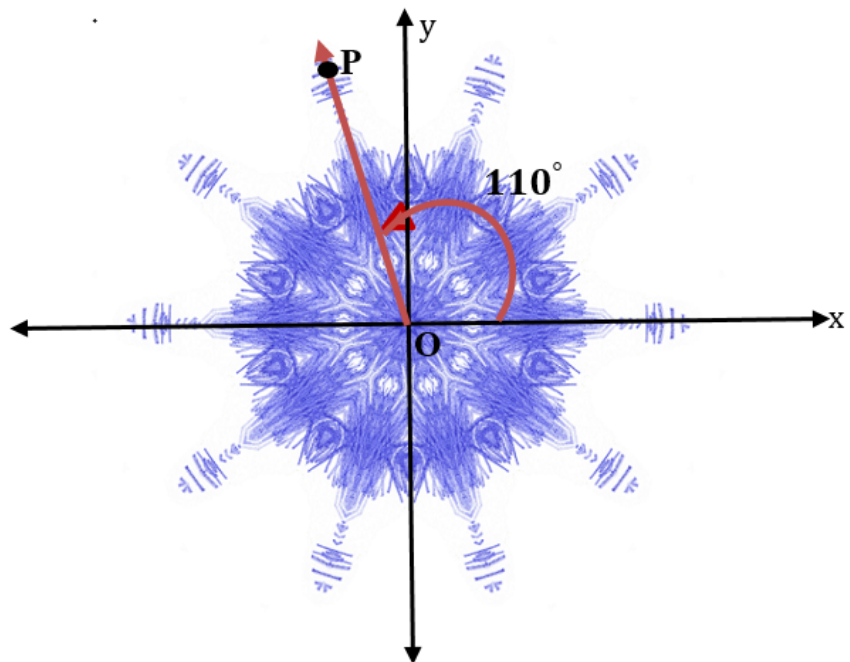
## QUESTION 6



The figure below shows an illustration of the coronavirus cell. If

$$OP = 9 \text{ mm}$$

, what are the coordinates of  $P$ ?



☐  $x = -9 \sin(70)$

☐

$$x = 9 \cos(20)$$

☐

$$y = -9 \sin(20)$$

☐

$$y = 9 \sin(20)$$

☐

$$x = -9 \cos(70)$$

☐

$$y = 9 \sin(70)$$

