10.5
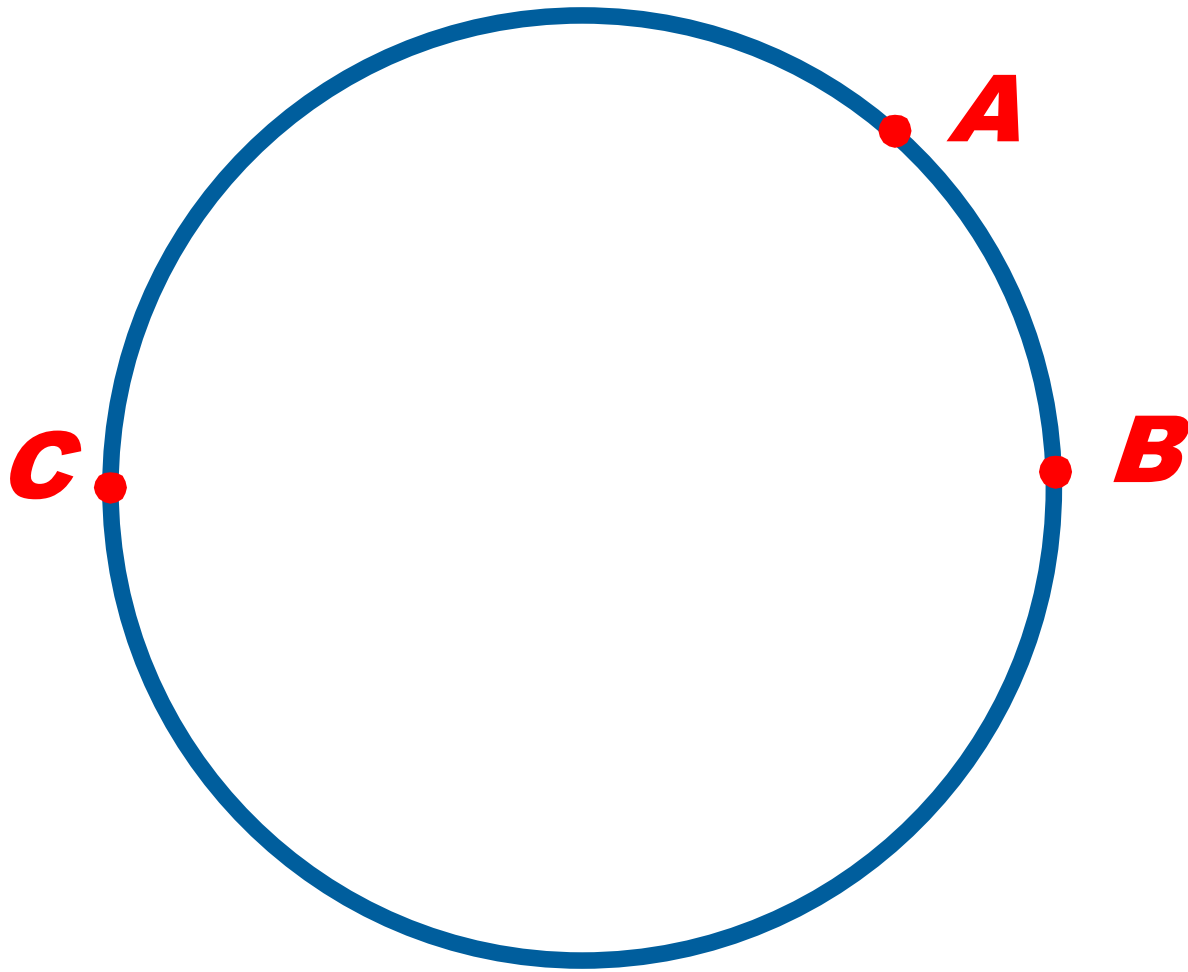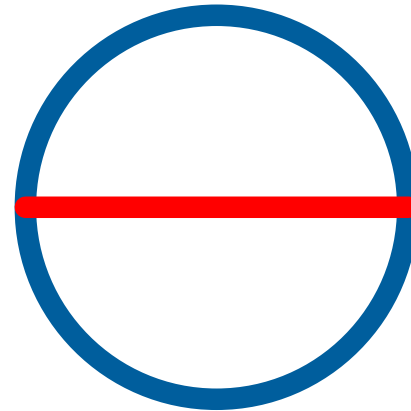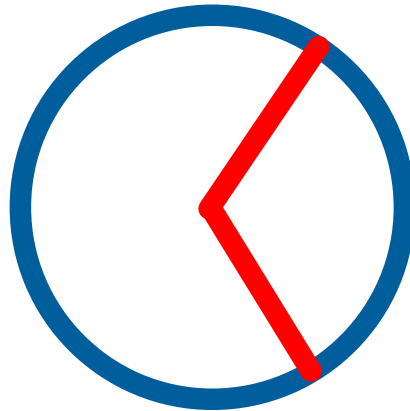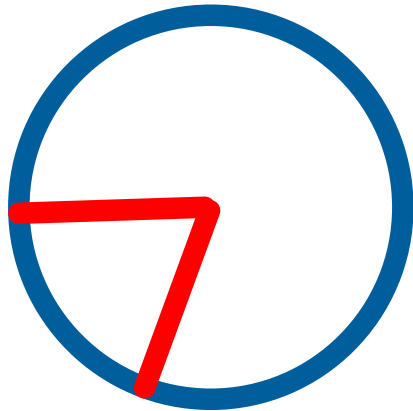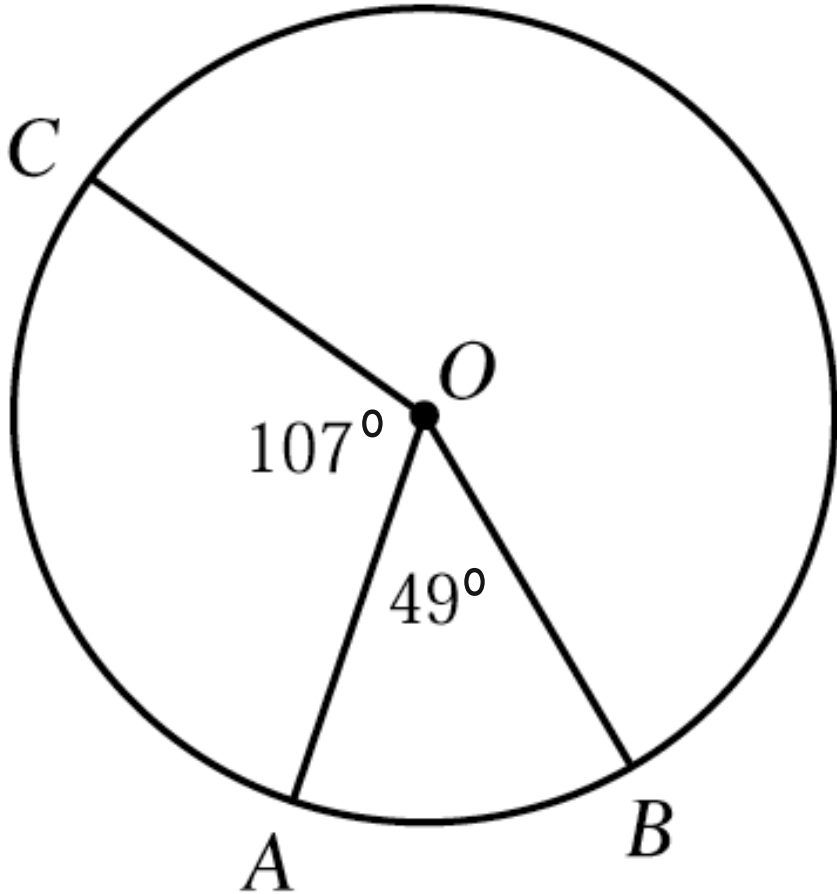
Arcs and Area of Circles

Arcs

Minor arcs are the _____ arc between two points.
Major arc is the _____ arc between two points.

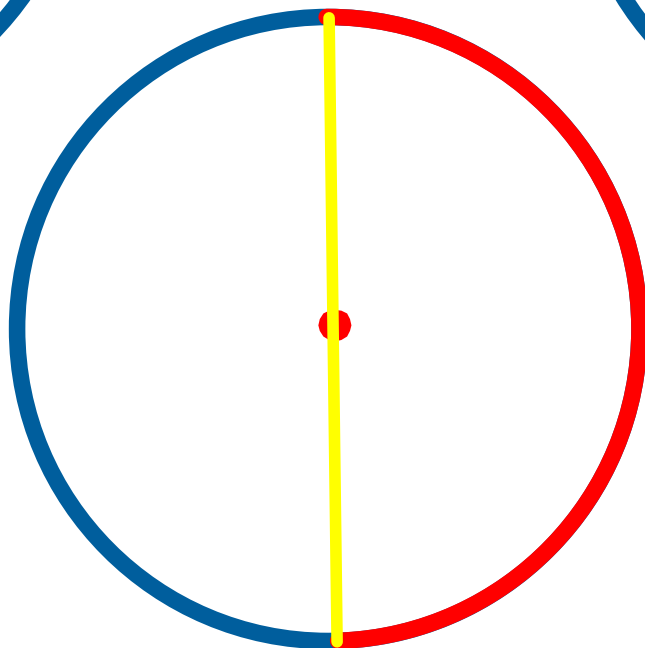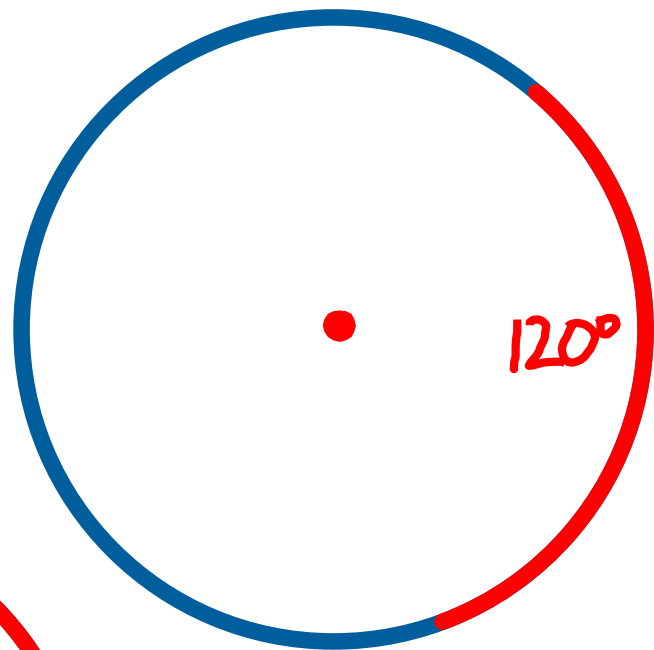# Central Angles

Arc Measures

$m\,AB =$

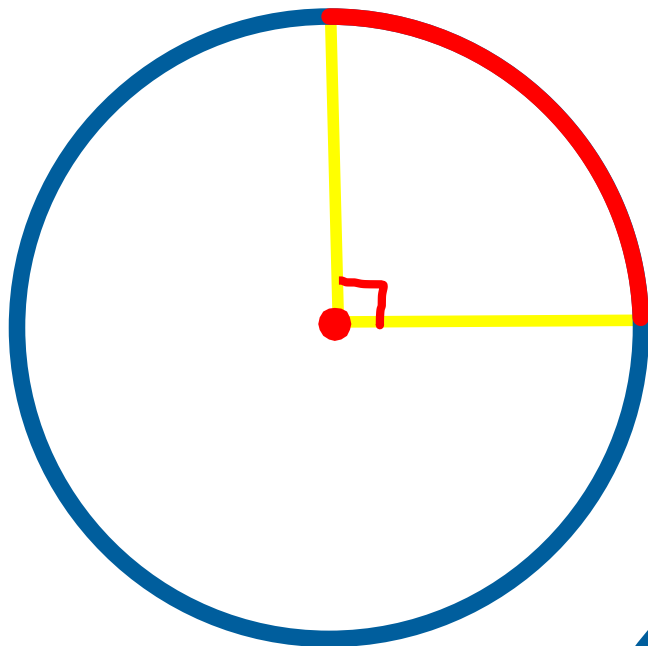$m\,ABC =$

$m\,BAC =$

$m\,ACB =$

Fraction of a circumference

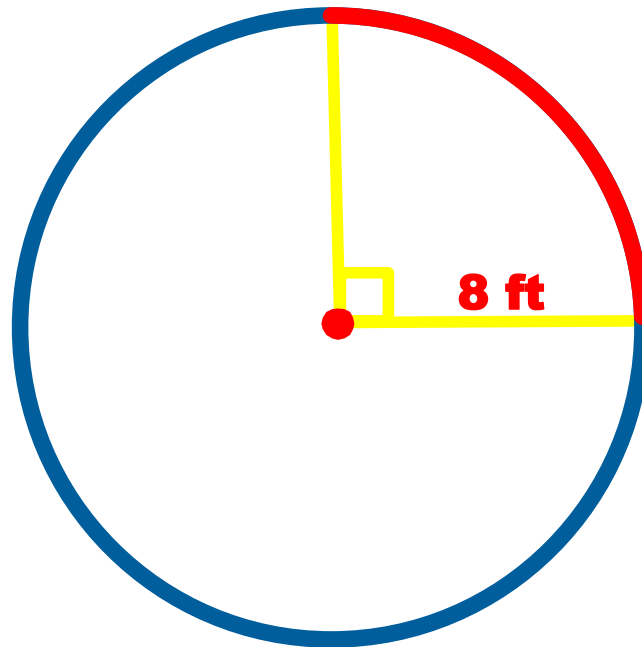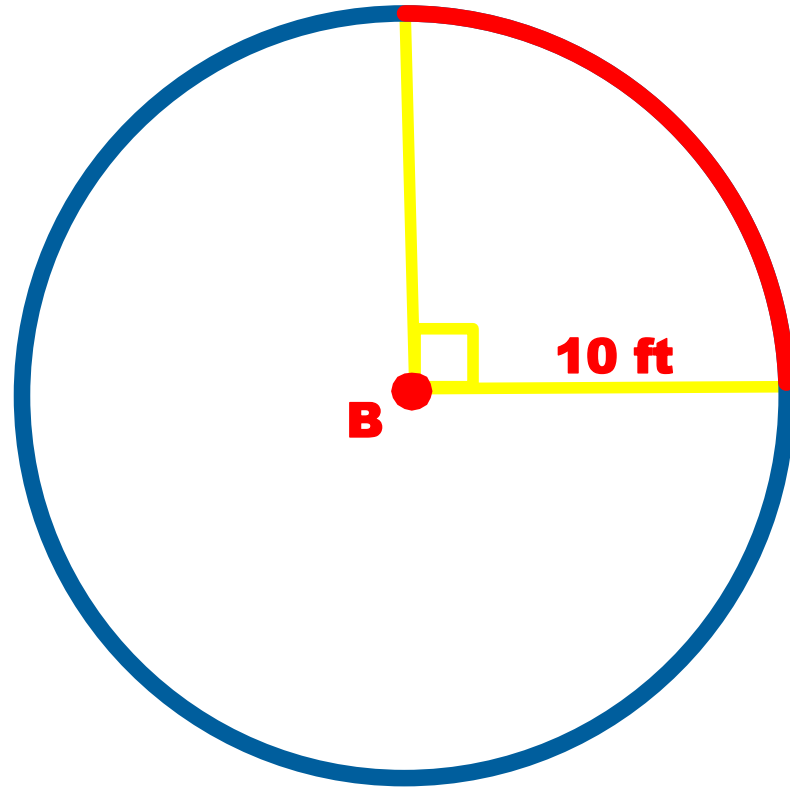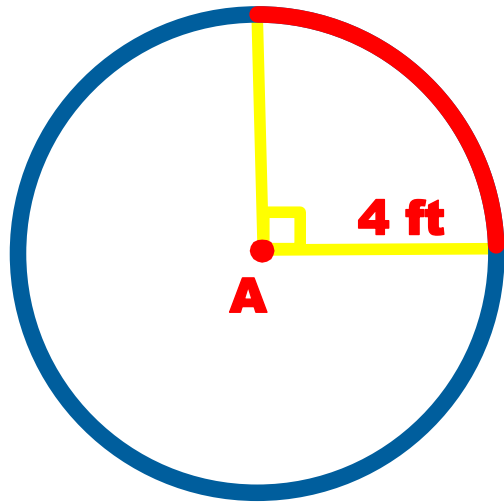120°

What is Arc Length??

Arc Measure   vs   Arc Length

This is the measure of an arc in relation to the central angle.

The is the length of the arc as part (fraction) of the circumference

8 ft

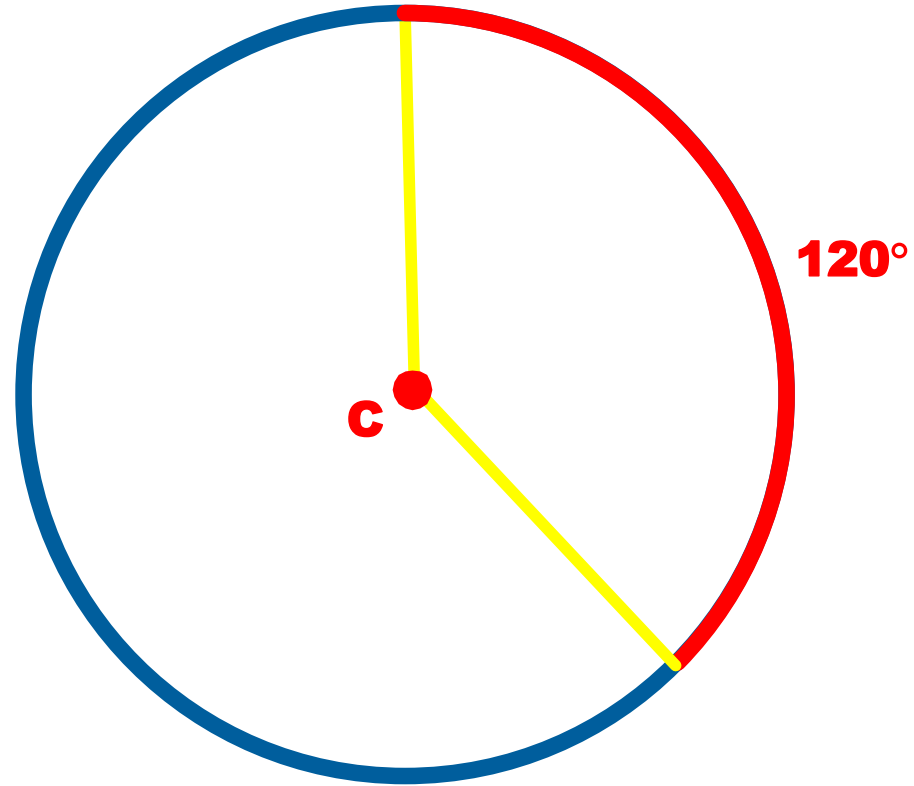# *Comparing Circles and Arcs*

4 ft

A

10 ft

B

What can you tell me about the arc measures of both circles?

What is the arc length of Circle A?

What is the arc length of Circle B?

Finding Arc Length

120°

c

What is the arc length of the red arc?
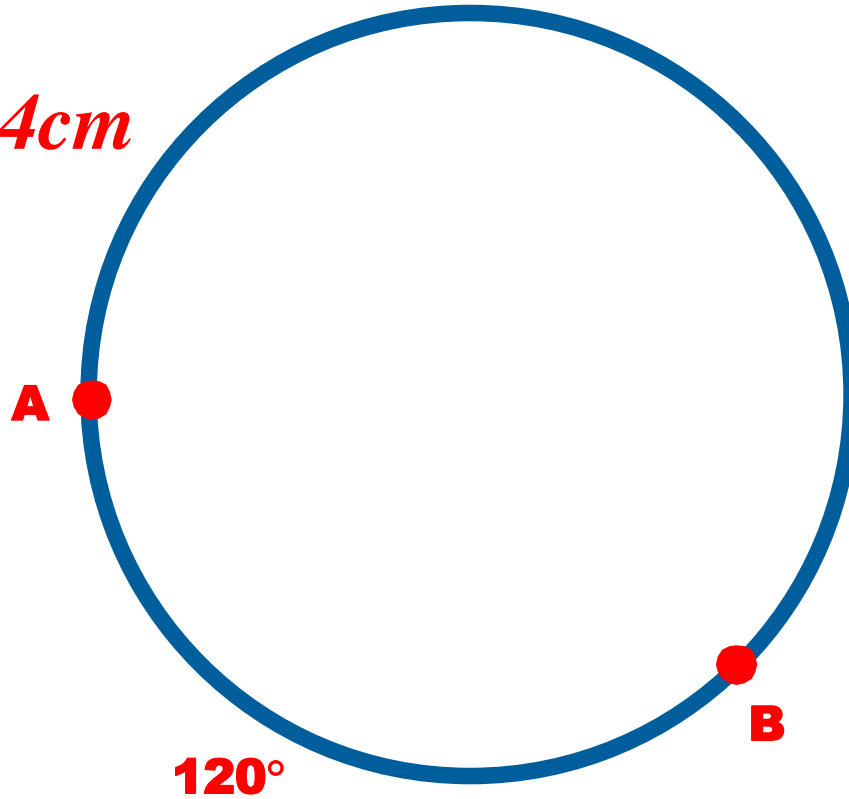
Formula for Arc Length

$$\textit{Arc length} = \frac{x}{360} \bullet C$$

Formula for Arc Length

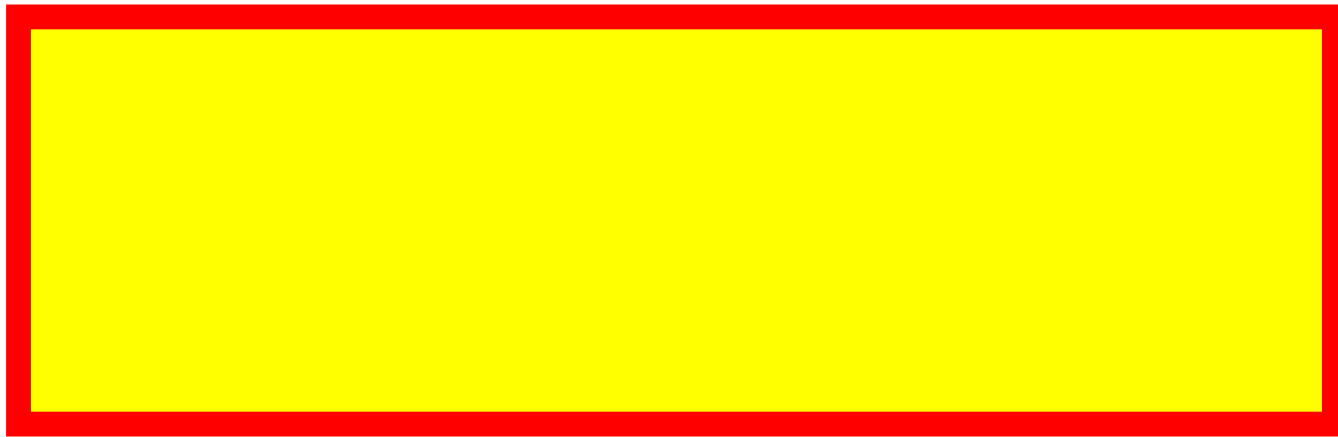$$\text{Arc length} = \frac{x}{360} \bullet \pi d$$
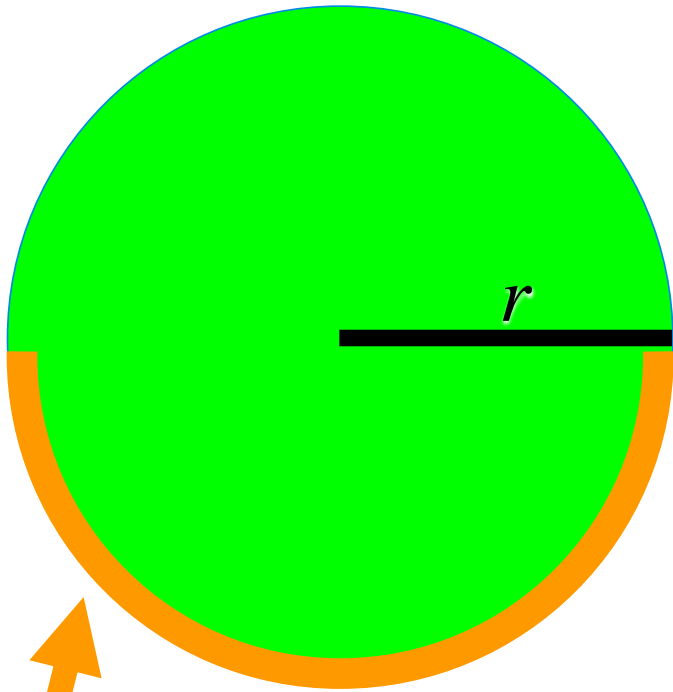
Practice

Radius = 24cm

A ●

● B

120°

1) What is the arc length of A͡B?

AREA FORMULA OF A CIRCLE

ONE WAY TO REMEMBER THIS, IS THAT AREA IS ALWAYS MEASURED IN SQUARES.

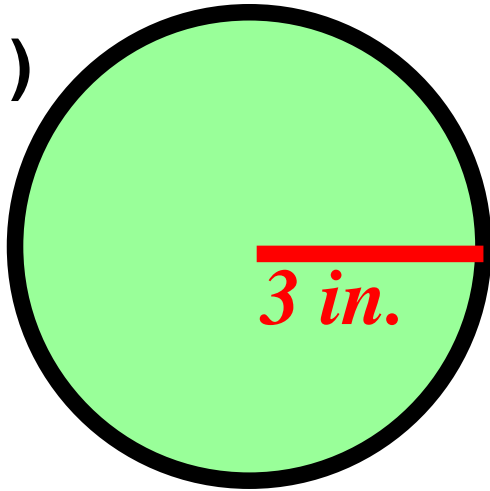**KNOWING THIS, WHAT'S THE FORMULA FOR HALF THE CIRCUMFERENCE?**
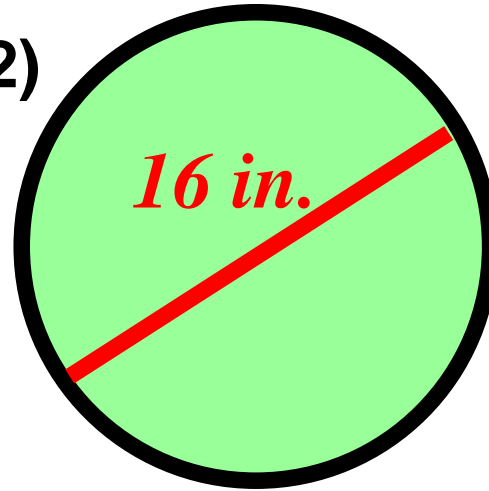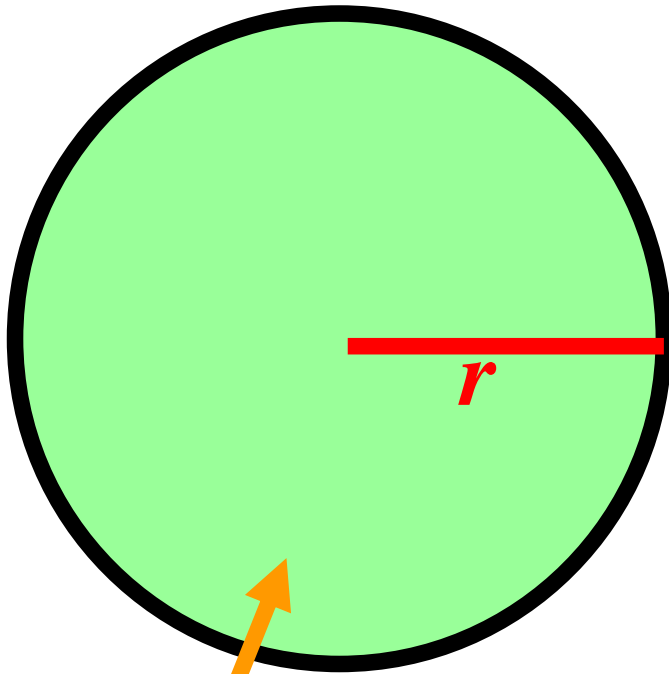
Half of Circumference $= \pi r$

CLASSWORK

1)

3 in.

2)

16 in.

CLASSWORK

3) Find the measure of the radius

r

Area = 50.24 in^2

CLASSWORK

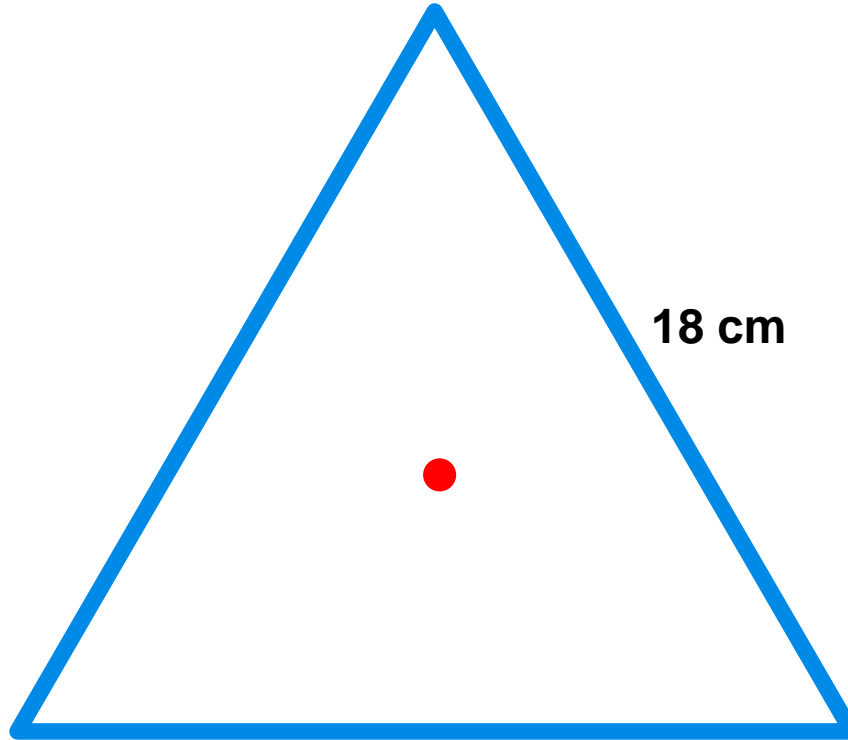**3) Find area of the green region**

2 m

6 m

6 m
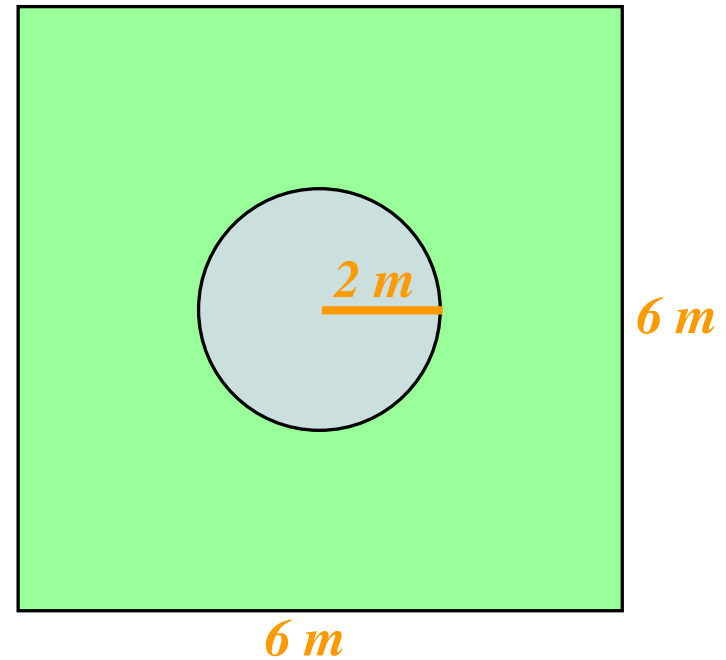
Find the area of the equilateral triangle.

18 cm
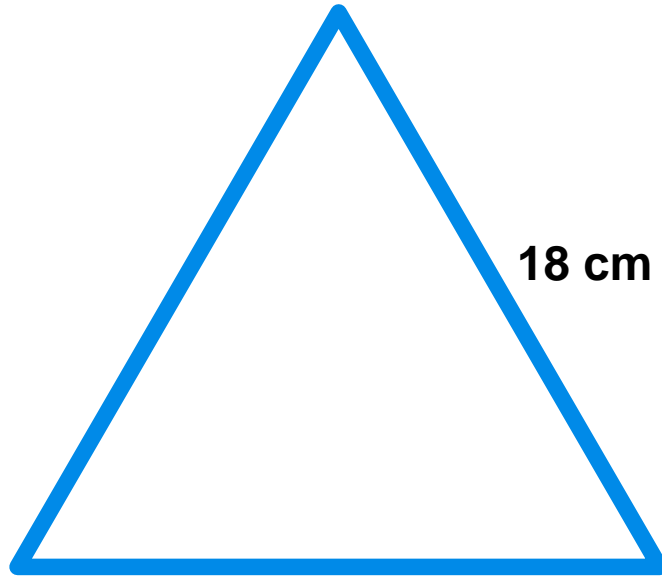
SYNTHESIS

Find distance from the centroid of this equilateral triangle to the midpoint of one sides.

18 cm

SYNTHESIS

Find distance from the centroid of this equilateral triangle to one of the vertices.

18 cm