



Math Virtual Learning

Geometry/Honors Geometry

Monday, May 11th



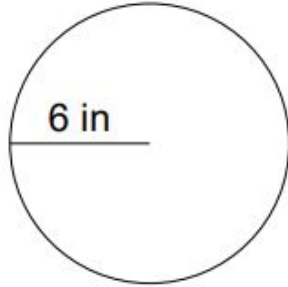
Grade/Course
Lesson: May 11th, 2020

Objective/Learning Target:
Students will find the area of a sector.

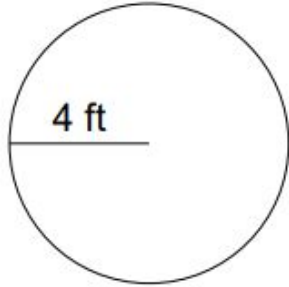
Warm-Up:

Find the area of the circles

4.

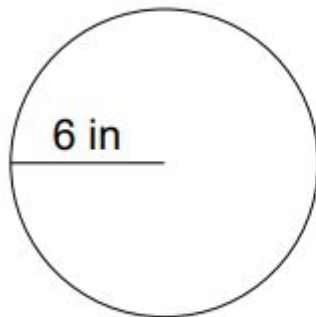


5.



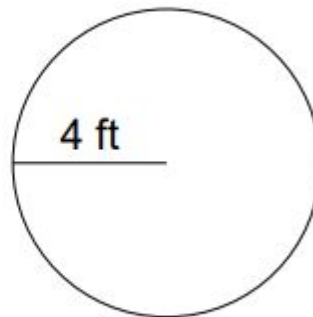
Warm-Up Answers

4.



113.04 square inches

5.



50.24 square inches

What if you wanted to find the area of a pizza, this time taking into consideration the area of the crust? Remember, crust typically takes up some area on a pizza. Leave your answers in terms of π and reduced improper fractions.



a) Find the area of the crust of a deep-dish 16 in pizza. A typical deep-dish pizza has 1 in of crust around the toppings.

b) A thin crust pizza has $\frac{1}{2}$ - in of crust around the edge of the pizza. Find the area of a thin crust 16 in pizza.

c) Which piece of pizza has more crust? A twelfth of the deep dish pizza or a fourth of the thin crust pizza?

Area of Sectors and Segments

A **sector of a circle** is the area bounded by two radii and the arc between the endpoints of the radii.



The **area of a sector** is a fractional part of the area of the circle, just like **arc length** is a fractional portion of the **circumference**. The **Area of a**

sector is $A = \frac{m\widehat{AB}}{360^\circ} \cdot \pi r^2$ where r is the radius and \widehat{AB} is the arc

bounding the sector. Another way to write the sector formula is

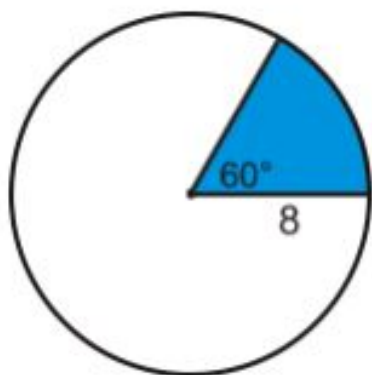
$$A = \frac{\text{central angle}}{360^\circ} \cdot \pi r^2.$$

The last part of a circle that we can find the area of is called a segment, not to be confused with a line segment. A **segment of a circle** is the area of a circle that is bounded by a chord and the arc with the same endpoints as the chord. The **area** of a segment is $A_{\text{segment}} = A_{\text{sector}} - A_{\triangle ABC}$



Finding the Area in Terms of Pi

Find the area of the blue sector. Leave your answer in terms of π .



In the picture, the central angle that corresponds with the sector is 60° . 60° would be $\frac{1}{6}$ of 360° , so this sector is $\frac{1}{6}$ of the total area.

$$\text{area of blue sector} = \frac{1}{6} \cdot \pi 8^2 = \frac{32}{3}\pi$$

Information

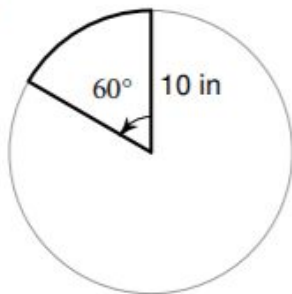
Please watch the following
examples: First Video:
Examples of finding the
Area of a sector



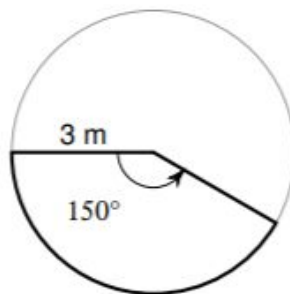
Practice:

Find the area of each sector. Round your answers to the nearest tenth.

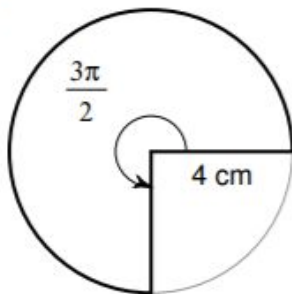
13)



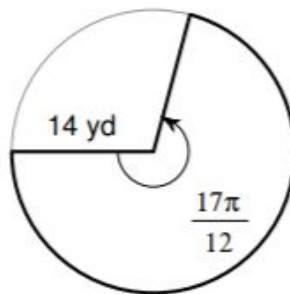
14)



15)

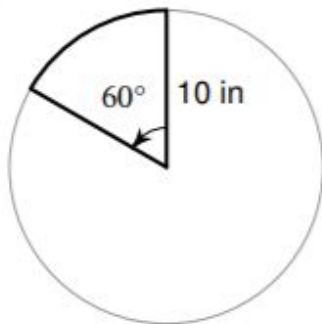


16)



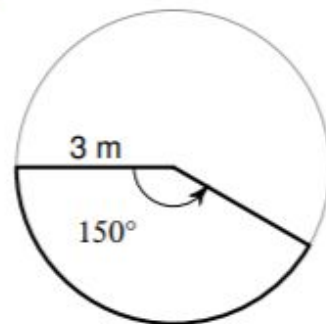
Answers

13)



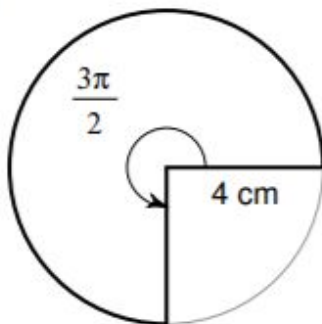
52.4 in²

14)



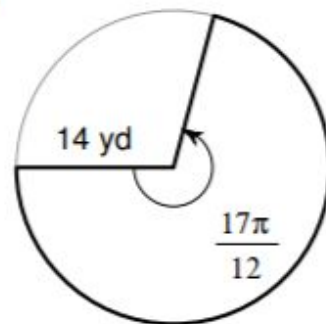
11.8 m²

15)



37.7 cm²

16)



436.2 yd²

Additional Practice

[Area of Sector Practice](#)

Click on the link and practice 10 problems.

Look at the explanation if you make a

mistake: [IXL Area of a Sector](#)