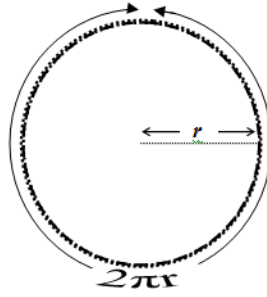


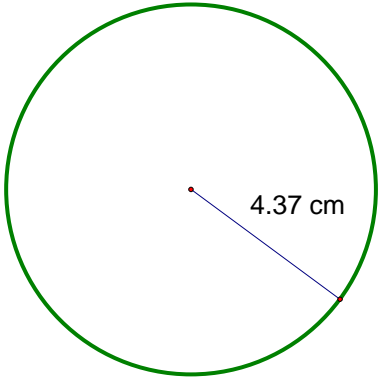
WARM-UPS Part I

REMINDER: $Circumference = 2\pi r = \pi d$

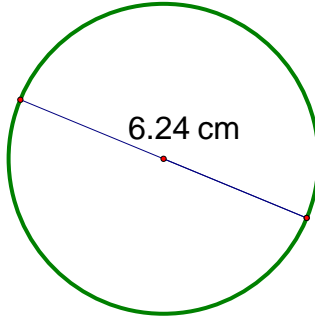


REMINDER:
 $\frac{DEGREES}{360} = \frac{ARC}{CIRCUMFERENCE}$

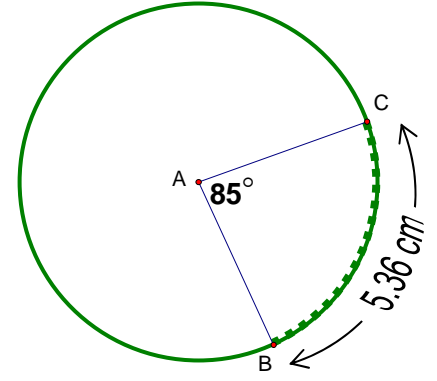
1. Find the circumference of :



C= _____

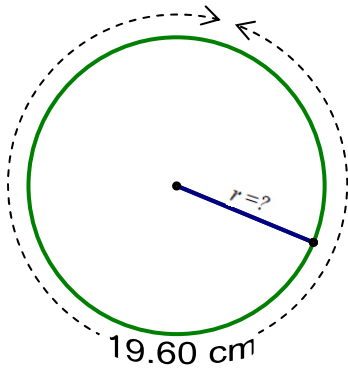


C= _____



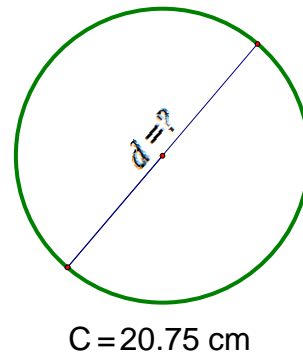
C= _____

2. Find the radius of :



r= _____

Find the diameter of:



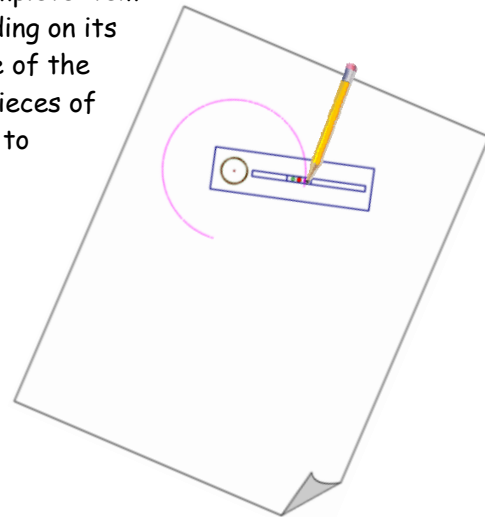
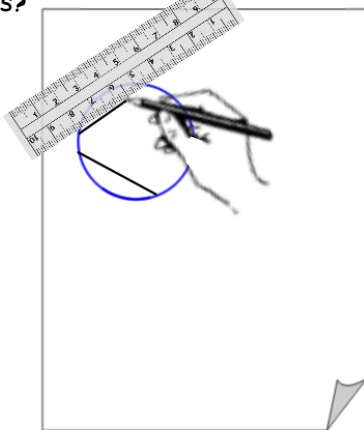
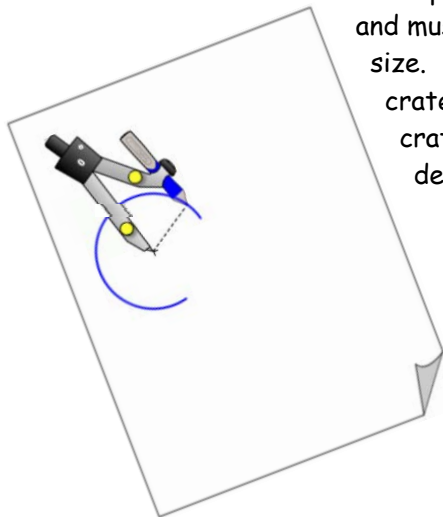
d= _____

Finding the Center of the Circle and Circumference Learning Task

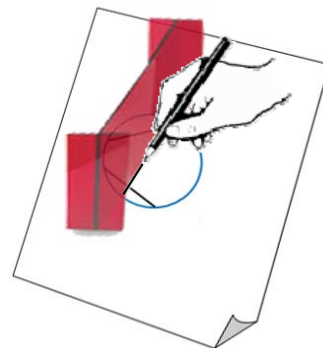
Finding the Center Again

Materials needed: Mira's, Compass, Wiki Sticks, Solo Cups, Tailor tape measurers

Anthropologists find artifacts that are only parts of the complete item and must work to discover what the item might be - depending on its size. Astronomers use mathematics to determine the size of the craters on the moon and other planets based on partial pieces of craters. How can we use these partial pieces of circles to determine their sizes?



Using a compass draw a circle with a radius of at least 5cm (label center first). Next, using a ruler draw two nonparallel, non-diameter chords. Then using a MIRA draw the perpendicular bisector of each chord.



Unit 5 - Circles

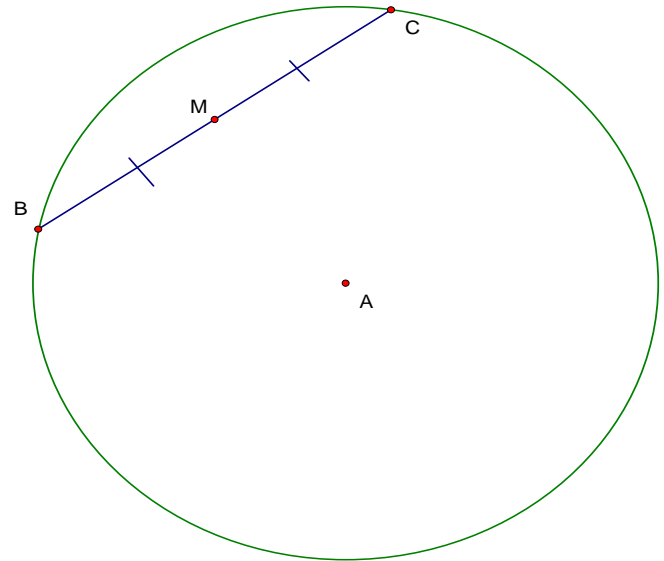
1. Based on the circle you just drew, do these two perpendicular bisectors intersect?
2. Based on the Circle you just drew, do you notice anything about the intersection of the perpendicular bisectors?

Compare with your neighbors and try to fill in the blanks of the following statements.

Make a Hypothesis: The perpendicular bisectors of chords of a circle go through

the _____ of the circle.

3. Consider the circle below with center A. If you were to draw a line from the center of the circle to the **midpoint** of chord BC, what might you hypothesize about the intersection of the two segments?



4. If you were to draw a line segment from the center of the circle to the endpoint of a chord, what is the name of the segment you just created? Why?
5. Using a CUP tipped upside down on your paper, with your pencil trace the circle where the lip of the cup touches your paper.



6. Using the techniques from the above problems, can you locate the center of the circle?
7. Now that you know where the center of your circle is, find the length of your radius in centimeters.
8. Now find the circumference of your circle in centimeters.

Whose Hat Is It?

<http://www.tcm.com/mediaroom/index.jsp?cid=240807>

Often time, crime scene investigators have to reconstruct crime scenes to find clues. Recently there has been a criminal nicknamed "Oddjob" on the loose, who has been using their hat as a weapon. In the criminals last crime they made a serious mistake: when they threw their hat, they missed their target and got the hat stuck in the wall. As they tried to pull their hat out of the wall, it tore and he left the piece of the rim that was stuck in the wall. The police have chased the criminal to this room, they have no idea what "Oddjob" looks like so everyone in this room is a suspect. They need your help to find the circumference of the hat based on the piece that was left behind in order to narrow down their search. First find the circumference and radius of each person's head in your group (in centimeters).

Suspect	Circumference	Radius

Look on the next page to find a sketch of the piece of the hat left behind. Use the sketch to answer the questions below. Begin by finding the arc length (use the piece of string provided) and circumference of the hat (in centimeters) to determine which students in this room could be a suspect.

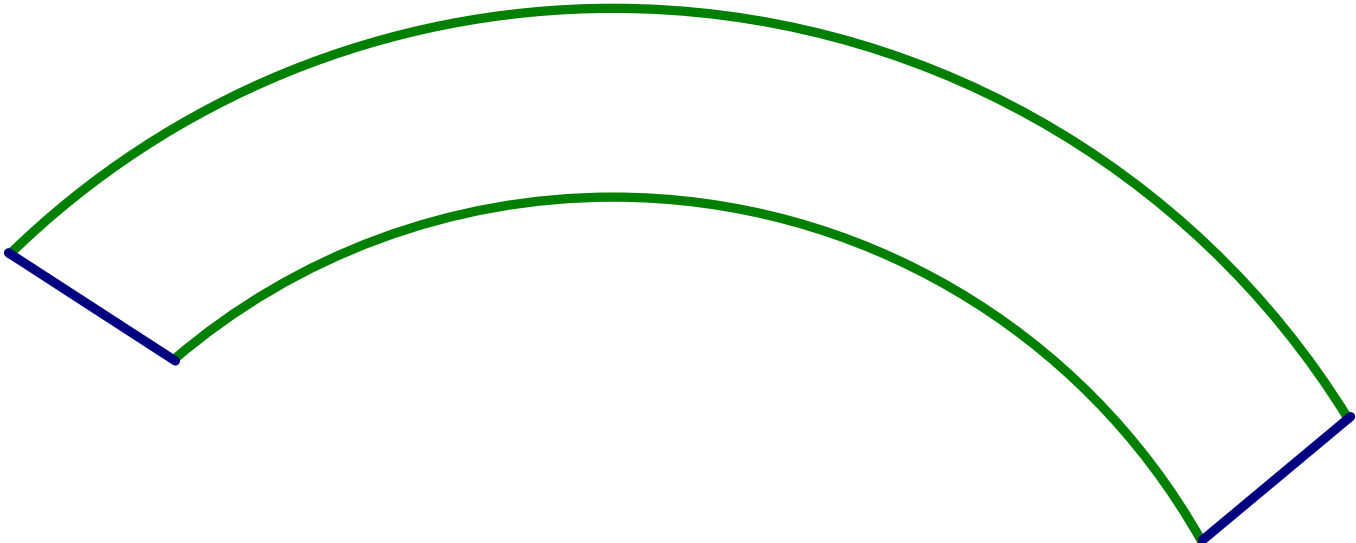
9. Arc Length _____ Radius: _____ Circumference: _____

10. Who is definitely not a suspect in your group? How did you come to that conclusion?

11. Who could be a suspect in your group? How did you come to that conclusion?

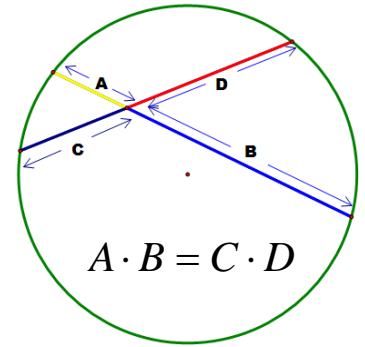
12. Now based on your radius and center point, reconstruct the size of the hat to be submitted for evidence.

Unit 5 - Circles

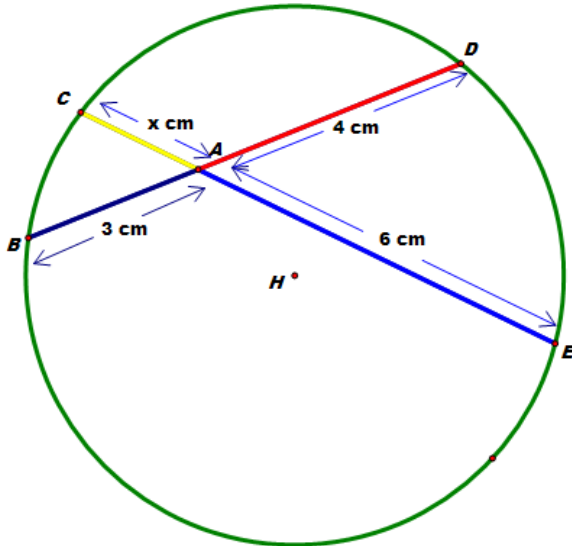


WARM-UPS - Part II

REMINDER: When two chords intersect, the product of each 'piece' of a chord is equal to the product of the other chord's pieces.

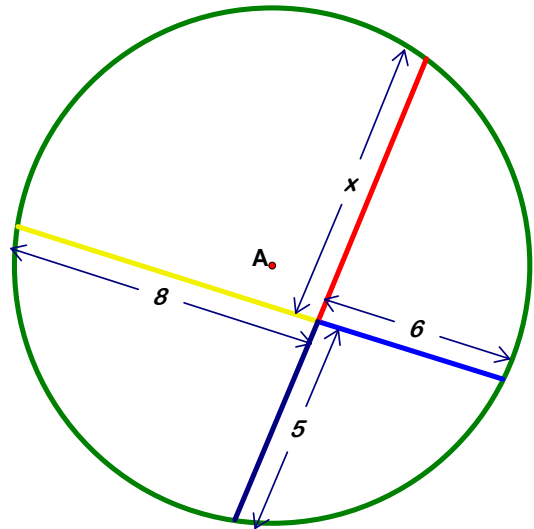


1.



X = _____

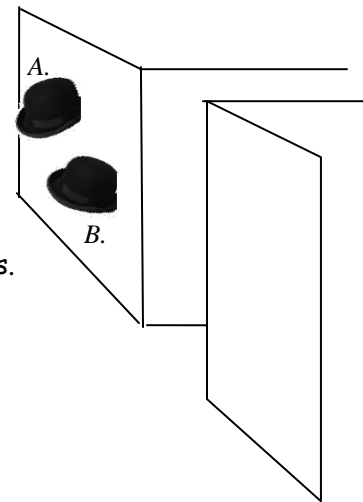
2.



X = _____

Which Hat Was Thrown Harder?

At another crime scene investigators have found two different hats that are protruding from the wall. The investigators would like to know how far each hat is stuck in the wall.



The crimes scene investigators don't want to move the hats but took some measurements of the hat as shown below. Which hat has stuck into the wall farther (Hat 'A' or Hat 'B')? Be careful the hats are not the same sizes.

