

Making A Circle Skirt

Introduction:

Why should students learn about geometry?
Because they can make fun clothing!

I wore this skirt (shown at right) to a teacher training, and got lots of compliments for its beauty and festivity, before I finally told them I had made it out of a tablecloth!

Lesson Summary:

Students will learn how to make an attractive skirt from a circle of fabric.

Important Terms:

Circle, center, diameter, radius, chord, circumference, pi, symmetry, mirror symmetry, rotational symmetry, point symmetry

Questions and Answers:

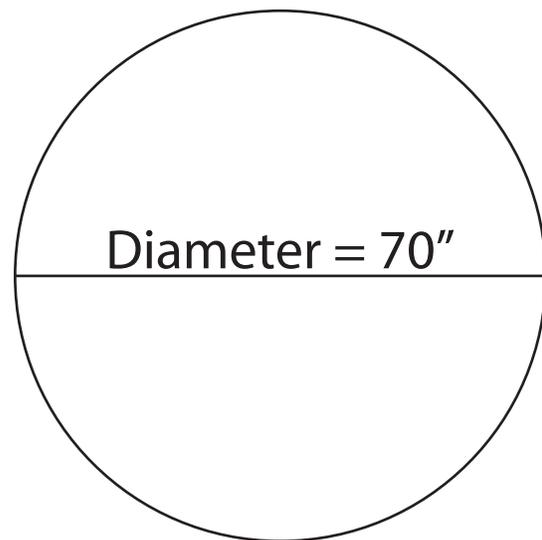
The questions here are meant to be put to the students. Answers to some questions can be given depending on the level of advancement of the class.

Instructions:

- (1) Purchase a 60" - 90" round tablecloth. This measurement refers to the **diameter** of the **circle**. (It should be pre-hemmed at the edges.)

Question: How can students find the diameter of the tablecloth?

Answer: They can fold it in half and measure along the fold. It is important to do it this way, because if they try to simply measure across the circle, they may not actually cross the **center** of the circle. If they miss the center, they will actually be measuring a **chord**, but not the full diameter.



(2) Use a tape measure to find the **circumference** of your waist. (You do not have to share your circumference with your students!)

(3) Find the **radius** of the circle you will need to cut out of the center of the fabric.

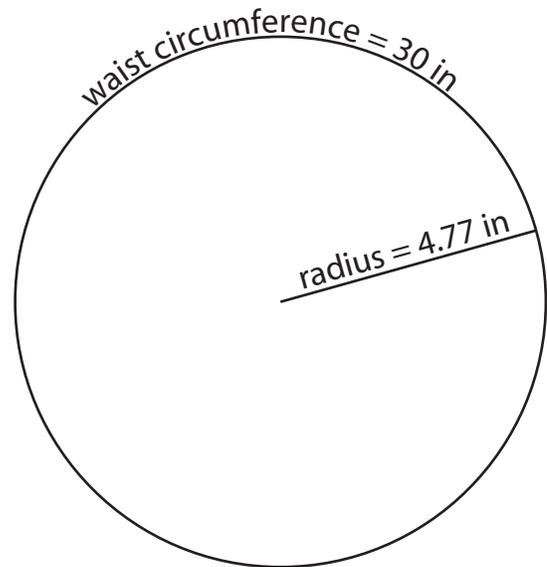
Question: Imagine your waist as a perfect circle. Given the circumference you just measured, what would its radius be?

Answer: Use the formula $C = 2 * \pi * r$

C is the circumference, r is the radius, and pi is about equal to 3.14.

Rearranged, $r = C/\pi/2$

For a circumference of 30 inches, r equals about 4.77 inches.

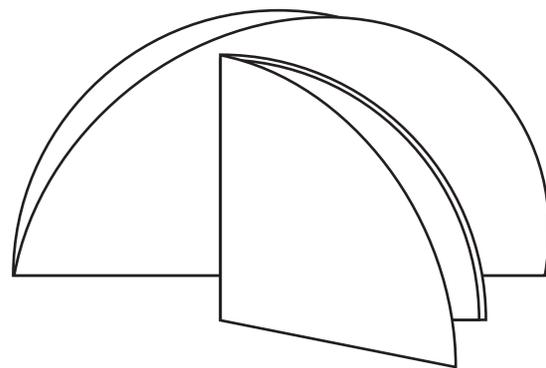


(4) Find the center of the fabric.

Question: How can the students find the center of the fabric?

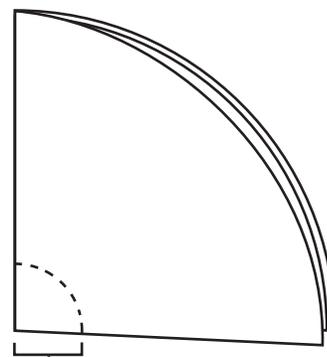
Answer: There are many ways to do this, but the easiest is to fold the circle into quarters. You can ask the students to identify the diameter and radius as they do this.

You can also ask the students about the **symmetry** of a circle. Their folds are showing that the circle has **mirror symmetry**. It also has **rotational symmetry**, and **point symmetry**.



(5) Put the zero end of the tape measure on the center of the table cloth (the corner point of the quarter circle). Swing it around and mark the radius directly on the cloth, making a dotted quarter-circle. Fabric chalk works best for this.

Cut along this dotted line to cut out the waist.



Radius of 4.77 in
(for a 30 in. waist)

(6) Cut a 7 inch slit along a radius of the circle. This will allow the skirt to fit over your hips. You can enlarge the slit if necessary.

(7) Try on the skirt, pinning it closed with a slight overlap at the slit. If the circumference is too large, pin two small pleats in the waist and sew them in place.

Sew single-fold bias binding in a matching color to finish the edges of the slit. Cut off the excess. Use a longer piece of seam binding to finish the waist. Use velcro to keep the slit closed.

(8) You're finished! Put on your new skirt!

