

Name: _____ Class: _____

Going Around in Circles

You encounter circles every day of your life. They are one of the most useful shapes. Circles are used for making things like tools, toys, and transportation vehicles, and everyday items like bottle caps, compact discs, and coins. Take a minute to think of how different your life would be without circles.



There are at least four measurements that are useful for describing the size of a circle: *diameter*, *radius*, *area*, and *circumference*. The **diameter** of a circle is any line segment that extends from a point on the circle, through the center, to another point on the circle. The **radius** is any line segment from the center to a point on the circle. **Circumference** means perimeter in the language of circles - it is the distance around the circle.

It is easy to measure the diameter and radius of a circle, but measuring the area and circumference is not as easy. You can't cover the circle with an exact number of square tiles to compute the area, and you can't easily use a ruler to measure its circumference.

As you work on the problems, look for connections between a circle's diameter, radius, area, and circumference. Search for clues that tell when each of these measurements gives useful information about a circular object in a given situation.



PRICING PIZZA

Many pizza restaurants sell different sizes of pizza. The sizes are usually measured by the diameter of a circular pie/pizza. Of course, the prices are different for different sizes. Do you think that a large pizza is usually the best buy? *Why or why not? (explain)*



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Francesco's Pizzeria sells small, medium, and large pizzas. A small pizza is 9 inches in diameter, a medium pizza is 12 inches in diameter, and a large pizza is 15 inches in diameter. Prices for cheese pizzas are \$6.00 for small, \$9 for medium, and \$12 for a large.

- A. Draw a 9-inch, a 12-inch, and a 15-inch "Pizza" *on centimeter grid paper*. Let 1 cm on the grid paper represent 1 inch on the pizza. Estimate the radius, circumference, and area of each pizza. (You may want to use the provided string to help you find the circumference.)

9-inch details:

Radius:

Circumference:

Area:

12-inch details:

Radius:

Circumference:

Area:

15 inch details:

Radius:

Circumference:

Area:

- B. Which measurement - radius, diameter, circumference, or area ~ seems most closely related to price? Explain your answer with proof.

- C. Use your results to write a paragraph summary about what you consider to be the best value of the pizza options at Francesco's Pizzeria.