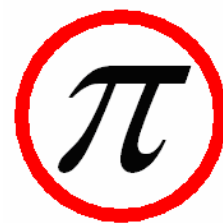




# The Pi Day Times



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## Pi Day 2009

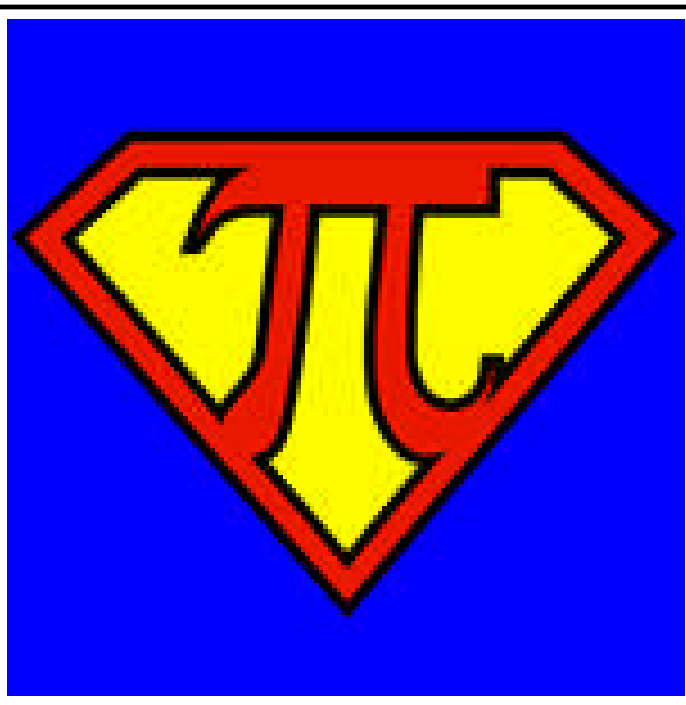
We have T-shirts, so we're official.

This year, Pi day is been taken to a new level. As most of you have already heard, the biggest change this year has been the formation of the Pi day committee. The committee meets every Tuesday in Mr. Sorrentino's room to discuss the plans for this year's Pi day, which we will be celebrating on March 11<sup>th</sup>. The committee was formed so that Pi day can run smoothly and to get the student body more involved in Pi day. There are sub-committees that are in charge of the Pi Day times, food, activities, and T-shirts. Yes, Pi day is now officially an SJ activity because to be an official activity you must have a T-shirt. We have also elected a head of the committee, Matt Bocchi, to whom all questions and suggestions about Pi day can be directed. The committee has been hard at work, with the T-shirts being ordered last Friday, Sign-up sheets placed the Math rooms (rms.103 and 104) for the various supplies needed for Pi day. Remember that anything you bring in for Pi day will be counted for extra credit. Also the Pi day challenges are due March 11<sup>th</sup>.

## What is Pi?

We have Pi day and use Pi everyday in our math classes, but how many of us actually know the definition of Pi? Well here's the answer to that very question:

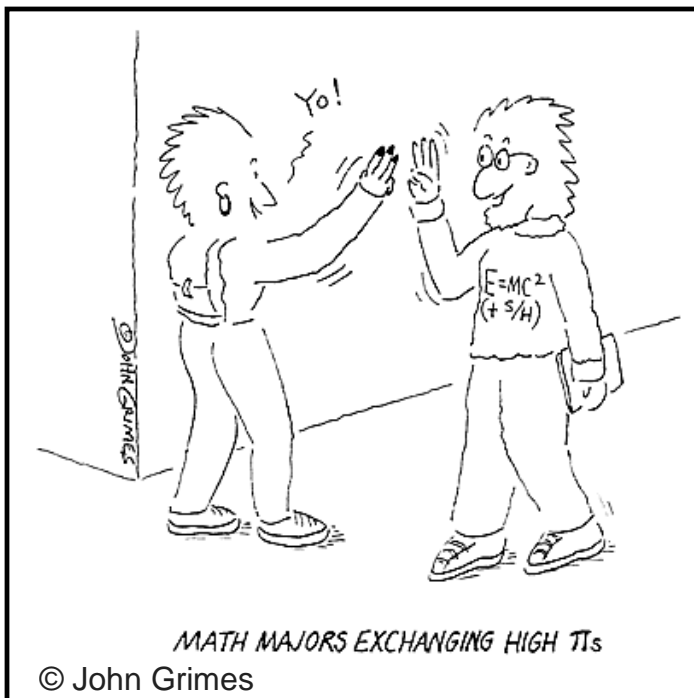
Pi is defined to be the ratio between the diameter and the circumference of a circle. It has lots of crazy properties that really intrigued the ancient Greeks who studied it. The main one is that it is irrational. This means that it cannot be written as a finite or a repeating decimal.



## Pi Day Challenges

1. The evil Dr. Tony is planning to take over the world. While making a rocket engine, he needed to take the tangent of a certain angle. However, he did not know whether the angle was measured in degrees or radians, so he set his calculator in both modes and took the tangent using both settings. To his surprise, the calculator gave the same answer both times! Find the smallest positive angle for which this is possible.
2. The inhabitants of Pi Land have names that are made up of digits rather than letters. Each person's name is a unique ten-digit anagram of 3141592653 (no two people have the same name). For example, one person's name could be 1439155623. What is the maximum possible population of Pi Land?
3. Albert Einstein was born on March 14, 1879. To celebrate his 60th birthday, his friend gives him a 20-inch pie. Albert eats a third of the pie, his wife Mileva eats a quarter, his first son Hans Albert eats a fifth, and his second son Eduard eats a sixth. How much pie remains uneaten, in square inches?
4. Mr. Sorrentino is rolling small steel disks down a ramp. Each disk is 4 cm in diameter and 5 mm thick. It takes 7 seconds to go down the ramp and the distance traveled from the top to the bottom of the ramp is 119 cm. How many revolutions does a disk make on the way down? Round your answer to the nearest hundredth.
5. Devin made seven pepperoni pizzas for a party. He cut the pepperoni himself from a sausage that was 13 inches long and  $1\frac{3}{4}$  inches in diameter. The pizzas were each 14 inches in diameter. His friend Taylor is a real math whiz (a math freak some say) and took the opportunity to calculate what percent of the total pizza surface area was covered by pepperoni. The pepperoni was cut into slices  $\frac{1}{4}$  of an inch thick. Each pizza has the same number of whole pepperoni slices (he ate any extra pepperoni!). What percent of the total pizza surface area was covered by the pepperoni? Round your answer to the nearest hundredth.

***All work must be shown***



### **Some History about Pi**

Pi was known by the Egyptians, who calculated it to be approximately  $(\frac{4}{3})^4$ .

The earliest known reference to pi occurs in a Middle Kingdom papyrus scroll, written around 1650 BC by a scribe named Ahmes.

Around 200 BC, Archimedes of Syracuse found that pi is somewhere about 3.14. He figured this out by taking a polygon with 96 sides and inscribing a circle inside the polygon. That was Archimedes' concept of Pi.