



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Nuri Kim	Project Number J1214
Project Title Simple As Pi?	
Abstract Objectives/Goals The objective is to try to get pi as accurately as possible using only math available to the average eighth grader (i.e.-- Algebra [not much], basic Geometry/Trigonometry, and arithmetic). Methods/Materials There are two experiments performed in this project. The first is Archimedes' Theory, where circles, polygon, and other basic Geometry/Trigonometry are applied to a formula credited to ancient mathematician Archimedes to calculate pi. The second experiment is Buffon's needle experiment, in which needles are tossed as randomly as possible on a grid many, many times. The data (whether the needle lands on a line or not) is recorded and processed through another formula, this one discovered by French mathematician Comte De Buffon. Results Archimedes' Theory provided results accurate, though not on the dot. The results were only approximations, but this was expected. As for Buffon's needle experiment, I was surprised with my result, which was remarkably after only 1,500 tosses. Conclusions/Discussion Tossing the needles was incredibly tedious, as was drawing the duodecagon for my project. I intend to improve my project's aesthetics and improve the project, itself, a bit by increasing the number of tosses. I feel 1,500 tosses may have been enough for county, but will most definitely not be suitable for state.	
Summary Statement The average-minded eighth grader's search for pi.	
Help Received Teacher helped review simple trigonometry, Brother helped toss needles	