Ancient Greek π

The famous Greek mathematician Archimedes came up with a remarkably accurate value for π. He decided that the perimeter of a 96-sided regular polygon (a polygon with 96 equal sides and equal angles) was pretty close to the circumference of a circle of the same diameter. (The polygon's diameter is the distance from a vertex to the opposite vertex). The number he came up with was

π = 22/7

Use a calculator to see how close he was.

Make a regular polygon by linking many paperclips together to see that it looks like a circle.

Ancient Egyptian π

The Egyptians had an estimate for π. They said that the area of an 8"x8" square was about the same as the area of a 9" diameter circle.

Look at our experiment to find out if they were right:

1. We have poured 500 ml of water from the Pyrex measuring cup into each of the baking pans. One is an 8"x8" square pan and the round pan is 9" in diameter.
2. Measure the depth of the water in each pan. What do you see, and what does it tell you about the areas of the two pans?

Calculate the Egyptian value for π:

1. Figure out the area of the 8"x8" pan by squaring 8 (multiplying it times itself).
2. Figure out the radius of the 9" round pan and square it.
3. Divide the results of step 1. by the results of step 2. What is the ancient Egyptian value for π?