MATH 230 Class Session #16 (10/20 Section 004; 10/21 Section 002):

1. Compare the circle measurements and ratio data and graph you obtained during Class Session #15 with those measurements, ratios, and graph obtained by a previous class that are recorded on the attached "Class Measurements of Circle's Diameters and Circumferences" page.

   In particular, when you calculate the ratios of your circle's circumferences to their diameters, is your average ratio approximately the same as that of the previous class?

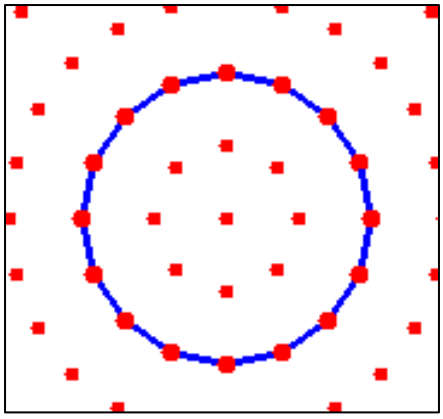
   According to our text, the exact ratio of the circumference of a circle to its diameter is the irrational number pi, denoted by π. The value of π approximated to four decimal places is 3.1416. Pi can also be approximated by the fraction 22/7. You are already familiar with the formulas $C \approx \pi d$ and $C \approx 2\pi r$ where "C" denotes the circumference of a circle and "d" denotes the diameter, and "r" denotes the radius.

   What would be the approximate circumference of a circle whose radius is 2 inches?

2. Because of our previous experience with the rectangular array model for multiplication, and our work on area problems with the geoboard leading to the development of the Pythagorean Theorem, it is reasonable to assume that we can calculate the areas of squares and rectangles in appropriate square units. Do the following activities designed to develop formulas for finding the areas of parallelograms and triangles.

   Activity Set 10.2(1a, 2a, 3-7 all) (These activities are in your spiral-bound activity book.)

3. Now, assuming we can find the areas of parallelograms and triangles, it is possible to estimate the area of a circle by completing the activity on the back of today's handout. Outline your process of estimating the area of a circle of radius 2 inches in the space below.



   Can we also estimate the area of a circle of radius 2" using a circular geoboard?