Assignment 6:

1. Let P_n be a regular polygon with 2^n sides that is inscribed in a circle of radius 1. Find the formula for the length of P_1. The length of P_2 is $4\sqrt{2}$. Figure 1 shows a picture of P_2 (in red) and P_3 (in blue).
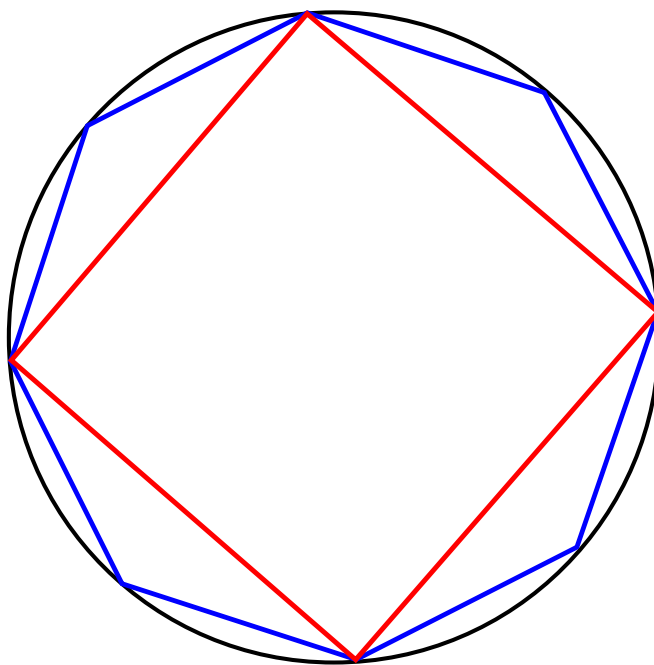

Figure 1: The polygons P_2 and P_3.

2. Explain how you can use your formula to get an approximation to π.

Challenge: How large do you have to take n to get 100 digits of accuracy?