Problem of the Week #4

**Directions:** Solve the following problem. The explanation must be on a separate sheet of paper. Show all work on one to two pages. Your explanation of your solution must be as thorough as possible. This problem will be due on 4/1/2003 and is worth 20 points.

**A.** A bicycle chain goes around a 25 cm diameter sprocket wheel and a 10 cm diameter sprocket wheel. The centers of the two sprocket wheels are 80 cm apart. Assume that when the chain is taut, 14.8 cm of chain is engaged in the sprockets of the smaller wheel, and 41.6 cm of chain is engaged in the sprockets of the larger wheel. What is the total length of the chain?

**B.** In order to repair bicycle chains, the repair person has to wrap the chain around a circular form whose circumference is equal to the length of the chain. What is the radius of the circular form needed for this chain?