

Mother's Pie

Mike

A circular pie may only be cut (and eaten) in radial “wedges”. How much pie must be eaten before the remainder can be put on a smaller plate?

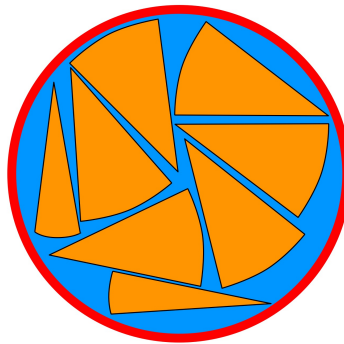


Figure 1: For example ...

Equivalently, the problem is to give bounds on the maximal total area of closed sectors of unit radius which can be placed disjointly within an open unit circle.

You are invited to send me solutions before September 13, 2008. These could be lower bounds, upper bounds or both, according to taste.

(This problem is a tribute to my mother.)