Circles and regular polygons

How does the size of the circumscribed and inscribed circles of a regular polygon with perimeter 50 feet change as the number of sides increases? Is there a pattern? Can you use a spreadsheet to explore the problem?

SAMPLE SPREADSHEET:

perimeter	no. sides	r (inscribed)	R (circumscribed)
50	3	4.8113	9.6225
50	4	6.2500	8.8388
50	5	6.8819	8.5065
50	6	7.2169	8.3333
50	7	7.4161	8.2313
50	8	7.5444	8.1660
50	9	7.6319	8.1217
50	10	7.6942	8.0902
50	11	7.7402	8.0670

Author: Randy Harter, Buncombe County Schools