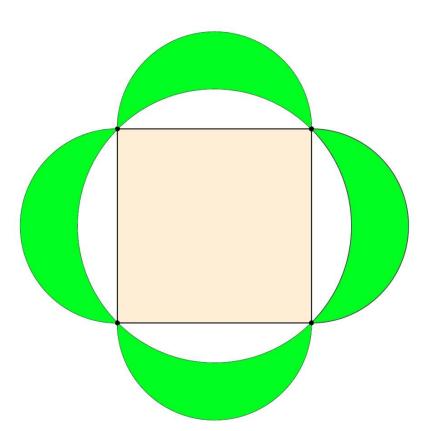
## Pi Mu Epsilon Problem of the Month March 2019

Consider a square, around which is its circumscribed circle (the circle that passes through all of the square's vertices). Then, four semi-circles are constructed, one for each side of the square and using each side of the square as a diameter.



Find the difference between the area of the square and the total area of the green lunes.

## Problem of the Month Rules:

- **X** Submissions must include a complete mathematical justification along with the answer.
- **X** Submissions may only be made by individuals or groups of two and must be dated.
- # Due date: March 26, 2019 before 5 p.m.; they may be given to Dr. Phillip Poplin or Dr. David Shoenthal.

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