

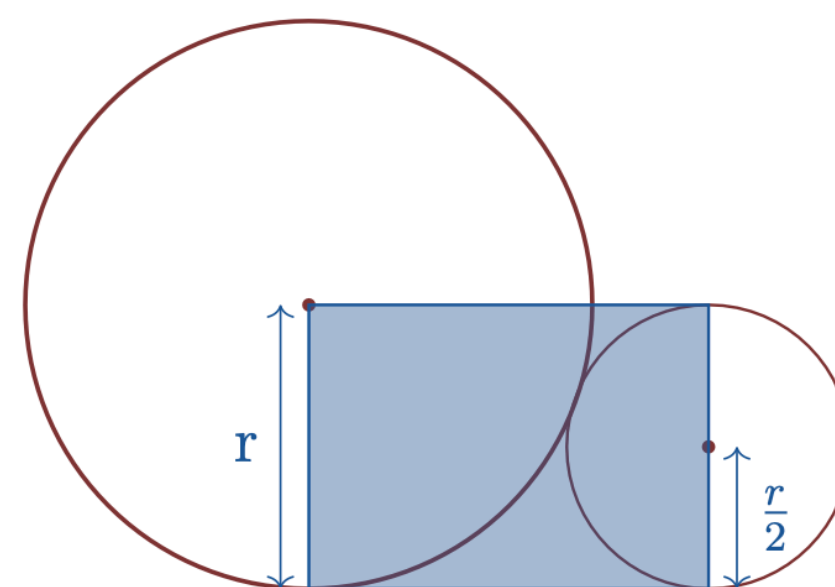


# MATH PROBLEM OF THE WEEK

## Spring 2025

### Problem 3

In the following diagram, the circle of radius  $r$  and a circle of radius  $\frac{r}{2}$  meet each other tangentially. Find the area of the shaded rectangle as a function of radius  $r$ .



Justify your answer.

**We welcome solutions from everyone. The undergraduate participant from the NMSU main campus with the most correct solutions at the end of the semester will receive an award of \$500.**

Solutions must be mathematically rigorous and originally obtained by the participants. Participants will be notified if their solutions are correct within a week.

**Deadline: Monday, March 3, 10 am**

Next problem will be posted on March 3

**Send solutions to: [mathpotw@nmsu.edu](mailto:mathpotw@nmsu.edu)**

**More information at: <https://math.nmsu.edu/activities/math-problem-of-the-week.html>**