MATH PROBLEM OF THE WEEK

Spring 2026

Problem 2

A large $5 \times 5 \times 5$ cube is made up of 125 smaller $1 \times 1 \times 1$ unit cubes. The entire exterior of the large cube is painted NMSU Crimson. Once the paint is dry, the large cube is disassembled back into the 125 small unit cubes. How many of the small cubes have exactly two faces painted Crimson? How many of the small cubes have no paint on them at all? 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 9, 10 am

Next problem will be posted on March 9

Send solutions to: mathpotw@nmsu.edu

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