



# MATH PROBLEM OF THE WEEK

Spring 2024

## Problem 5

Suppose four positive integers  $a, b, c, d$  satisfies

$$ab + cd = 38$$

$$ac + bd = 34$$

$$ad + bc = 43$$

Find all possible  $a, b, c, d$ . 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 25, 10 am**

Next problem will be posted on March 25

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

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