



MathLovers

Problems 12/25/2025  
Solutions to the problems below  
will be published on Sunday 12/28/2025



**Problem 1.** Find the number of pairs  $(a, b)$  smaller than their respective moduli for which the system of congruences

$$\begin{cases} x \equiv a \pmod{15}, \\ x \equiv b \pmod{12} \end{cases}$$

has a solution.

*Good luck!*

We encourage you to submit your solutions via the website  
<https://mathlovers.eu/submit-solution/>!