



Problems – 10/30/2025

The solutions to the problems below
will be published on Sunday 11/02/2025

- Problem 1.** The functions f and g are defined on the set of real numbers and satisfy the system of equations

$$\begin{cases} f(x) + 2g(1-x) = x^2 \\ f(1-x) - g(x) = x^2 \end{cases} \quad (1)$$

By what formula is $f(x)$ expressed?

- Problem 2.** A regular hexagon is given. Tosia and Mateusz play a game consisting of drawing diagonals – alternately they draw diagonals joining two vertices, however the diagonals they draw are not allowed to intersect. The player who cannot make a move loses. Tosia starts the game; determine who will win the game and what the winning strategy is.

Good Luck!

We encourage you to submit your solutions via the website:

<https://mathlovers.eu/submit-solution/>!