



MathLovers

Problems – 08/18/2025

The solutions to the problems below
will be published on Thursday 08/21/2025

- Problem 1.** In any triangle ABC , let M and N be the midpoints of the sides AB and AC , respectively. Let P be the midpoint of the segment MN . Denote by G the centroid of $\triangle ABC$. Prove that the points A , P , and G are collinear.

***Note:** The centroid of a triangle is defined as the intersection point of its medians.*

- Problem 2.** Find all prime numbers p such that the number $p^4 + 4^p$ is also prime.

Good Luck!

We encourage you to submit your solutions via the website:

[https://mathlovers.eu/submit-solution/!](https://mathlovers.eu/submit-solution/)