

PROBLEM OF THE MONTH

DEPARTMENT OF MATHEMATICS
ELMHURST UNIVERSITY
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Let $\alpha = \sqrt{2} + \sqrt{3}$.

- (1) Show that there exists a polynomial $P(x)$ with integer coefficients such that $P(\alpha) = 0$.
- (2) Show that α is not a rational number.

Please submit your solution to tung.nguyen@elmhurst.edu