



Problem of the Week #6

11/7/2022 to 11/20/2022

Let $f(x)$ be a polynomial with integral coefficients, and further suppose there are two distinct points on the graph of f , say P and Q , with integral coordinates. Show that if the length of \overline{PQ} is also integral, then \overline{PQ} is parallel to the x -axis.

Solutions for this problem can be submitted to Dr. Brian Miceli at bmiceli@trinity.edu. People who submit solutions will be acknowledged on the next problem. If you like these problems, you may be interested in the Putnam Exam, and more information on the Putnam Exam may be found [HERE](#).

Solutions to the previous problem were submitted by Ziad Aramouni (Lebanon), M.V. Channakeshava (India), Ritwik Chaudhuri (India), Ruben Victor Cohen (Argentina), Evan Fu (Beaverton, OR), Ong See Hai (Singapore), Rob Hill (Gambrills, MD), Steve King (Pullman, WA), Hari Kishan (India), Lukas Klawuhn (Germany), Tengiz Kutchava (Georgia, the country), Tin Lam (St. Louis, MO), Yann Michel (Paris, France), François Seguin (Amiens, France), Hicham Selmouni (Paris, France), and Zurab Zakaradze (Georgia, the country).