UNIVERSITY OF WISCONSIN
PLATTEVILLE
DEPARTMENT OF MATHEMATICS

Problem of the Week #4

(Spring 2024)

Assume that $a^2 + b^2 = c^2$, for positive real numbers a, b, and c. Prove that

$$\arctan\left(\frac{a}{b+c}\right) + \arctan\left(\frac{b}{a+c}\right) = \frac{\pi}{4}.$$

[Please fully explain your answer.]

Email solutions to `kwonmi@uwplatt.edu` by 2:00pm on Wednesday, February 21, 2024.

Every week, the best solution submitted earns a $10 Platteville gift certificate; the top scorer each semester also wins a cash award. Good luck!
You can always see the Problem of the Week (and complete rules) online at:

`http://uwpmath.weebly.com/`