



UNIVERSITY OF WISCONSIN
PLATTEVILLE
DEPARTMENT OF MATHEMATICS

PROBLEM OF THE WEEK #6
(Fall 2021)

The Pioneers are trailing by one point in the final seconds. As the buzzer sounds, Maiah puts up a potential game-winner. Panicking, the defender slaps her wrist, causing the shot to spin out, but earning Maiah a pair of free throws. If she makes both, the Pioneers win! Making one out of two would force overtime, leaving each team the same chance of winning. There's also a third possibility, but let's not talk about that. If the two shots are independent, how much greater is the Pioneers' probability of winning if Maiah makes her first free throw than if she misses it?

[Please fully explain your answer.]

Email solutions to kwonmi@uwplatt.edu by 2:00pm on Wednesday, October 27, 2021.

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/>