



UNIVERSITY OF WISCONSIN
PLATTEVILLE
DEPARTMENT OF MATHEMATICS

PROBLEM OF THE WEEK #2
(Spring 2022)

Let $f(x) = x^9 - 6x^7 + 9x^5 - 4x^3$. Show that if x is an integer, then $f(x)$ is divisible by 8640.

[Please fully explain your answer.]

Email solutions to kwonmi@uwplatt.edu by 2:00pm on Wednesday, February 9, 2022.

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/>