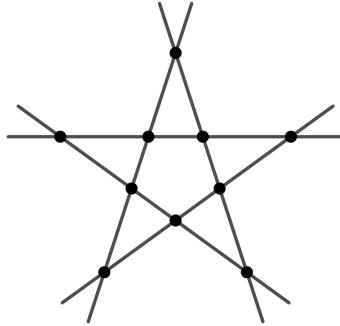




PROBLEM OF THE WEEK #2
(Fall 2023)

Five distinct lines in the plane can intersect (two at a time) in as many as ten different points, as shown. On the other hand, five parallel lines would have zero intersection points.



Find the largest integer $k < 10$ for which no set of five distinct lines in the plane intersects (two at a time) in exactly k points.

[Please fully explain your answer.]

Email solutions to swensonj@uwplatt.edu by 2:00pm on Wednesday, September 27, 2023.

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/>