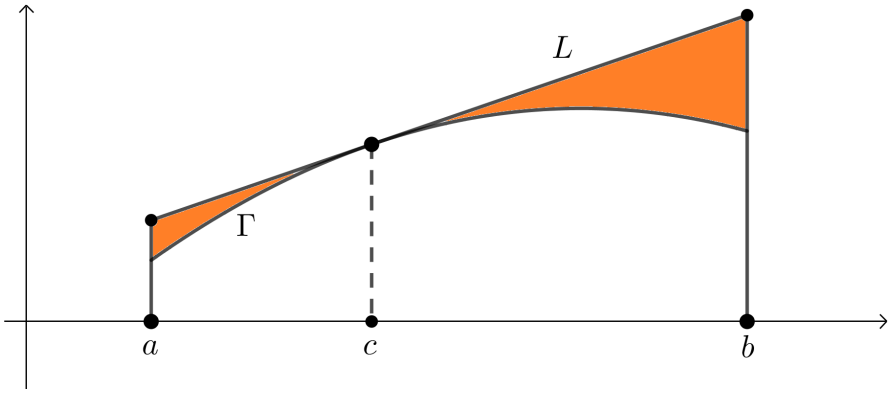
UNIVERSITY OF WISCONSIN
PLATTEVILLE
DEPARTMENT OF MATHEMATICS

Problem of the Week #10

(Fall 2021)

Let Γ be the graph of a function that is differentiable and concave down on the interval $[a, b]$, and let L be a line tangent to Γ at $x = c$.
What value of c minimizes the shaded area, which is bounded by Γ, L, $x = a$, and $x = b$?



[Please fully explain your answer.]

Email solutions to `kwonmi@uwplatt.edu` by 2:00pm on Wednesday, November 24, 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/`