

UC Merced Applied Math Problem of the Month

February 2024

$$\text{Let } a = \sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\dots}}}} \text{ and } y = x^{x^{x^{x^{\dots}}}}$$

What is the value of a ?

What is the derivative of y ?

Draw the graph of y . For which values of x is y well-defined?

To submit your solutions for a chance to win an Amazon gift card, and to find out detailed contest rules,

- scan the QR code to the right, or
- go to <https://appliedmath.ucmerced.edu/news-events/problem-month>

