

OCTOBER/NOVEMBER

EVALUATE IT

Let $g(x) = \ln x$. Evaluate the following.

$$\lim_{p \rightarrow 0} \left(\lim_{q \rightarrow 0} \left(\frac{g(27 + 27p + 9p^2 + p^3) - g(27)}{4pq} - \frac{12g(3 + p + q) - 12g(3 + q)}{16pq} \right) \right)$$

RULES

- (1) You must be an undergraduate enrolled in classes at USC-Columbia.
- (2) Write your solutions clearly and show all of your work.
- (3) Staple all sheets together.
- (4) Bring your solutions to the math office (LC 411) and drop it in the box provided.
- (5) **Include your name and email address.**
- (6) Sign the drop-off sheet to record your submission.

Look for a new problem on the 15th of every month!