

# Cal Poly Department of Mathematics

## Puzzle of the Week

Nov 12 - 18, 2010

Let  $f(x) = e^{-x^2}$ . Find a function  $g \not\equiv 0$  and an interval  $(a, b)$  as large as possible containing zero, on which  $g(x)$  is defined, such that the false product rule

$$(fg)' = f'g'$$

holds.

*Solutions should be submitted to Morgan Sherman:*

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*Email: sherman1 -AT- calpoly.edu*

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*before next Friday. Those with correct and complete solutions will have their names listed on the puzzle's web site (see below) as well as in next week's email announcement. Anybody is welcome to make a submission.*

<http://www.calpoly.edu/~sherman1/puzzleoftheweek>