

# Cal Poly Department of Mathematics

## Puzzle of the Week

Jan 28-Feb 4, 2011

Calculate

$$\sum_{i=1}^{\infty} \sum_{j=1}^{\infty} \frac{i^2 j}{5^i(j5^i + i5^j)}$$

[Hint: Write  $S + S$  is a clever way, then find and make use of a formula for  $\sum_{i=1}^{\infty} \frac{i}{5^i}$ ]

*Solutions should be submitted to Morgan Sherman:*

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*Email: sherman1 -AT- calpoly.edu*

*Office: bldg 25 room 310*

*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>