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### Rock Paintings

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# Fermi Questions

John Adam, Column Editor

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## Rock paintings

The accompanying photograph is of a rock located on the campus of Old Dominion University (in Norfolk, Virginia). Every week or so during the semester, different student organizations paint the rock in expressions of support for various communities and movements both locally and nationally.



### Question 1:

If the rock is painted about every week throughout two 15-week semesters, how many 1-gallon (~4-L) cans of paint would be required? I placed my hat on the rock for the purposes of scale.

### Question 2:

Estimate the mass of the rock and the mass of one coat of (dry) paint covering the surface.

Look for the answers online at [tpt.aapt.org](http://tpt.aapt.org) under “Browse,” at the very end of the current issue.

## Welcome to our new “Fermi Questions” Column Editor, John Adam!

**Dr. John A. Adam** has been professor of mathematics at Old Dominion University since 1984. His PhD from the University of London was in theoretical astrophysics (an exceedingly long time ago). As an undergraduate, he was exposed to a concentrated diet of Monty Python’s Flying Circus, and he has never fully recovered, even at his advanced age. His first introduction to the USA was through the humor of *The Far Side* cartoons by Gary Larson.

He has broad interests in mathematical modeling and applied mathematics, ranging from mathematical biology to meteorological optics. He is a frequent contributor to Earth Science Picture of the Day (<http://epod.usra.edu/>). In 2007, he was winner of an Outstanding Faculty Award for the State of Virginia. In 2012, he was a recipient of a Carl B. Allendoerfer Award from the Mathematical Association of America (MAA). The award is made to authors of expository articles published in the MAA journal *Mathematics Magazine*.

He has published approximately 120 papers in mathematical and scientific journals and given over 180 talks and presentations to professional and university/college groups.

He has written several books (all published by Princeton University Press): *Mathematics in Nature: Modeling Patterns in the Natural World*, *X and the City: Modeling Aspects of Urban Life*, and *A Mathematical Nature Walk*. He is also coauthor (with physicist Lawrence Weinstein) of *Guesstimation: Solving the World’s Problems on the Back of a Cocktail Napkin*. There are now several different translations of *Guesstimation*: Chinese, Italian, Japanese, and Portuguese, among others. His latest book, *Rays, Waves, and Scattering: Topics in Classical Mathematical Physics*, was published in June 2017. His website can be found at <https://fs.wp.odu.edu/jadam/>.

**Fermi Questions** are brief questions with answers and back-of-the-envelope estimation techniques. To submit ideas, please email John Adam ([jadam@odu.edu](mailto:jadam@odu.edu)).