

The Math News

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Mathematics and Web Search Engines

Today's sophisticated web search engines rely on probability, linear algebra, and graph theory to determine which web sites are likely to be most relevant to an internet user. Probability theory is introduced in several USNA math courses: **SM219**, **SM230**, **SM239**, and **SM314**. Linear algebra is so widely used in engineering, the sciences, and economics, that the introductory linear algebra course, **SM261**, would be valuable to a student in any of these disciplines. More advanced linear algebra topics are taught in **SM461**. The introductory graph theory courses, **SM342**, is very popular among math majors, and is often followed by the more advanced course, **SM444**.

Midshipmen Group Study Program

Want to do better in calculus? Need extra help in the evenings? Try the Midshipmen Group Study Program, led by upperclass midshipmen,

Sunday 2000 - 2200

Monday - Thursday 1900 - 2200

Michelson 107, 109, and 111.

For more details, see <http://www.usna.edu/MGSP>

New and/or Experimental Math Courses

Each semester, the mathematics department offers several new and/or experimental math courses. In the spring of 2003, midshipmen will have the opportunity to study **The History of Mathematics Through the Sciences**

(**SM485B**), **Error Correcting Codes (SM486)**, **Chaos (SM486A)**, **The Theory of Knots and Links (SM486B)**, **Mathematical General Relativity (SM486D)**, and **Introduction to Computational Science and Engineering (SM486E)**. In addition, the aerospace engineering course **Viscous Flow (EA425)**, will count as a math major elective due to its emphasis on mathematical methods. Course descriptions and instructors of new and/or experimental courses are listed at <http://www.usna.edu/acdean/courses/newcourses032.html>

Aquarium Puzzle

The base of an aquarium is six square feet and it is filled with water to a depth of nine inches. How much does the water level rise if a one foot metal cube is placed in the aquarium? How much does the water level rise if a second one foot metal cube is placed next to the first?¹

Solution to Last Issue's Math Puzzle

The midshipman's check was for \$31.63. The cashier gave him \$63.31. After losing a nickel, he had \$63.26, twice the amount of the check.

For previous issues of Math News, see <http://mathweb.mathsci.usna.edu/faculty/mathnews/mathnews.html> and <http://mathweb.mathsci.usna.edu/faculty/mathnews/mathnews2.html>

1. H. E. Dudeney, *536 Puzzles and Curious Problems*, Charles Scribner's Sons, USA, 1967.