

Math Mole

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Last Day of June

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Quote:

There are things which seem incredible to most men who have not studied mathematics.

—Archimedes

Puzzle1: A snail creeps 7 ft up a wall during the daytime. After all the labor it does throughout the day, it stops to rest a while ... but falls asleep!! The next morning it wakes up and discovers that it has slipped down 6 ft while sleeping.

If this happens every day, how many days will the snail take to reach the top of a wall 23 ft in height?

Puzzle2: Cut out the grid on the extra page. Make cuts to divide the grid into two pieces that will fit together to make a square. The cuts must be along the lines of the grid. If you do not succeed the first time, try again using what you have learned.

Puzzle3: Each empty white square in the grids on the third page contains one of the numbers 1, 2, 3, . . . up to n , where n is the number of empty squares. Each of the horizontal and vertical equations should be true. Each number will be used exactly once.

Mathematician of the Day



Archimedes, 287 B.C. – 212 B.C

Archimedes was considered one of the greatest mathematicians. He invented machines used as engines of war, the Archimedes' screw, the compound pulley, and a system for expressing large numbers. He "believed that pure mathematics was the only worthy pursuit." He loved geometry and perfected a method of integration. He was known for giving an accurate approximation for π , accurately calculating square roots, and most of all, for his Archimedes' principle. The Archimedes' principle gives weight of a body immersed in a liquid.

Today:

Link between subspaces, spanning, linear independence, basis and stuff we know about solving linear systems (5.5)

Monday:

Not sure as of press time.

Career Spotlight: Budget Analyst

Type Of Work: Budget analysts can be found in private industry, nonprofit organizations, and the public sector. In private sector firms, a budget analyst examines budgets and seeks new ways to improve efficiency and increase profits.

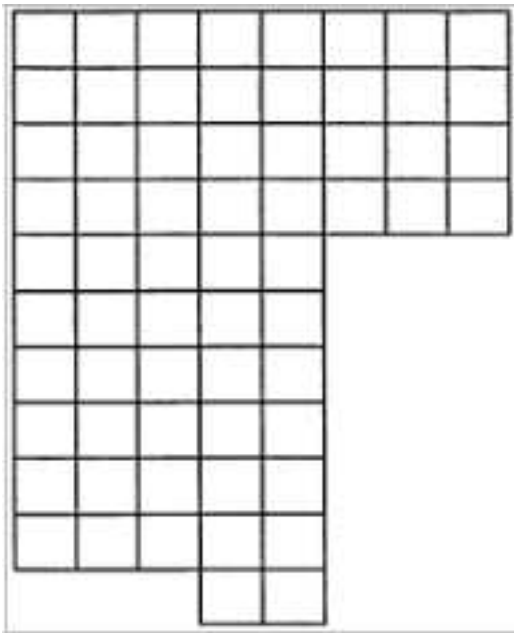
Analysts examine the budget estimates or proposals for completeness; accuracy; and conformance with established procedures, regulations, and organizational objectives. Sometimes, they employ cost-benefit analysis to review financial requests, assess program tradeoffs, and explore alternative funding methods. They also examine past and current budgets and research economic and financial developments that affect the organization's spending.

Work Situation: Budget analysts usually work in a comfortable office setting. Long hours are common among these workers, especially during the initial development and midyear and final reviews of budgets. The pressures of deadlines and tight work schedules during these periods can be stressful, and analysts usually are required to work more than the routine 40 hours a week.

Education: Private firms and government agencies generally require candidates for budget analyst positions to have at least a bachelor's degree, but many prefer or require a master's degree. Within the Federal Government, a bachelor's degree in any field is sufficient for an entry-level budget analyst position, but, again, master's degrees are preferred. State and local governments have varying requirements, but a bachelor's degree in one of many areas—accounting, finance, business, public administration, economics, statistics, political science, or sociology—may qualify one for employment. Because developing a budget involves manipulating numbers and requires strong analytical skills, courses in statistics or accounting are helpful, regardless of the prospective budget analyst's major field of study.

Pay: Salaries of budget analysts vary widely by experience, education, and employer. Median annual earnings of budget analysts in May 2004 were \$56,040. The middle 50 percent earned between \$45,170 and \$70,530. The lowest 10 percent earned less than \$36,850, and the highest 10 percent earned more than \$87,380.

Outlook: Competition for budget analyst jobs is expected over the 2004-14 projection period. Candidates with a master's degree should have the best job opportunities. Familiarity with computer financial software packages also should enhance a jobseeker's employment prospects.



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