# NSF Math Column

## Problem of the month

**On New Year's day, few kids get together and decide to play a simple math game. They write the year 2013 on the blackboard. Every minute they decide to do the following: the written number is erased and the product of its digits plus 12 is written on its place. What number will be written on the blackboard after 24 hours?**

Would you like submit your answer? Please click on the following link:
https://spreadsheets.google.com/viewform?formkey=dHR6ek5BazVnRVM3d01nbG1fNVdybXc6MA

*Names of everybody who submitted correct answers will be published in the next edition!*

*Interested to know the solution for last column's problems? Refer to the end of this document!*

*For any questions or comments, please contact the team at NSFMathColumn@gmail.com*

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## Answer to Problem of the month (Vol 2-12)

**16**

**Solution (Source: RMT):**

Given logA/logB = A/B.

⇨ B(log A) = A(log B)

⇨ log $A^B$ = log $B^A$

⇨ $A^B = B^A$

Possible values are (2, 4) and (4, 2) assuming only integer values. Therefore, the sum of the products = 8 + 8 = **16**.

## Who submitted correct answers?

- Ricky Garim (MI)
- Anup Hiremath (Fremont, CA)
- Vamsi Subraveti (Nashville, TN)
- Sashidhar Guduri (Ann Arbor, MI)
- Anish Chaluvadi (Simpsonville, SC)
- Adityagautham sezhian (Painted Post, NY)
- Shaan Bhandarkar (Potomac falls, VA)
- Sachin Raghavendran (Cary, NC)
- Aayush Gupta (Saratoga, CA)
- N Shankar (NJ)
- Ajit Kadaveru (Fairfax, VA)
- Anubhava Watal (Edison, NJ)
- Hemanth Chitti (Bangalore, India)
- Anjali Nambrath (Marlboro, NJ)
- Sayuj Shajith (Suwanee, GA)
- Desigamoorthy Nainar (Champaign, IL)
- Sunita Upadhyayula (Plainfield, IL)
- Arunabh Sinha (Carmel, IN)
- Sushil Upadhyayula (IL)
- Anitha Ramakodi (Parsippany, NJ)
- Dhivya Senthil Murugan (Denver, CO)
- Amit Maheshwari (IL)
- Rama devi Kodali (Cary, NC)
- Rohith Edupuganti (Cary, NC)
- Suganth Kannan (Weston, FL)

- Srivani Edupuganti (Cary, NC)
- Pranav Upadhyayula (Plainfield, IL)
- Sushovan Guha (Missouri City, TX)
- Siddarth Guha (Missouri City, TX)
- Mythri Challa (Coralville, IA)
- Anirudh Kuchibhatla (Hyderabad, India)
- Abhinav, Arnav and Dad Goel (Chicago, IL)

Thanks to all who attempted to solve the problem of the month. We look forward to your continued interest and increased participation!