

I U P U I
MATH CLUB TEASER #1

October 3, 2008
(due October 10, 2008)

SOLUTION

To each number n in $\{0, \dots, 999,999\}$ associate the number $c(n) = 999,999 - n$. Note that the sum of the digits of n and $c(n)$ in each decimal position is equal to 9. Then, the sum of all digits in n and $c(n)$ is $6 \times 9 = 54$. Since $c(n)$ never equals n , and there are 500,000 pairs $(n, c(n))$ in $\{0, \dots, 999,999\}$, the sum of digits from 1 to 999,999 will be $54 \times 500,000 = 27,000,000$. Adding the digit 1 from the number 1,000,000, gives a total of 27,000,001.

SOLVED BY:

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KB, Team Me.