

Problem of the Week-3: Simplify This Sum

Find a closed formula for the sum

$$S(n) = \left| \sum_{i=1}^n (-1)^{i-1} i \right|$$

As always, please explain your answer.

Posting Date 9/20/08. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 10/3/08. The problem is from the School Science and Mathematics Journal.