

4

PLAY WITH YOUR MATH

Seven Ate Nine

Which positive integers can be written as the sum of two or more consecutive positive integers?

$$\begin{array}{ccccccc}
 & \text{5} & & \text{22} & & \text{24} & \\
 & \text{┌───┐} & \text{┌──────────┐} & \text{┌──────────┐} & & & \\
 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + \dots \\
 \text{└──────────┘} & & \text{└──┘} & & \text{└──────────┘} & & \\
 \text{15} & & \text{18} & & \text{17} & &
 \end{array}$$

In how many ways can a number n be written as the sum of two or more consecutive positive integers?

When you think you've got it, write out your solution and turn it in by **Friday, May 9, 2014**. For questions and to submit solutions, see Mr. Kelly, Mr. Schwartz, Ms. Harding, Ms. Santosuosso, Ms. Yu, or your math teacher. The three best solutions will receive extra credit.