

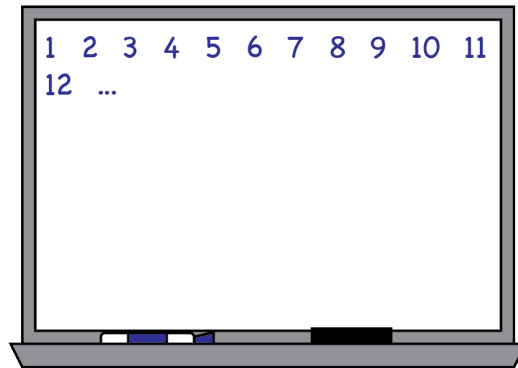


## Problem of the Week

### Problem E

#### Wipe Away 3

Tyra writes consecutive positive integers on a whiteboard starting with the integer 1. However, when she writes a number that is a multiple of 9, or contains the digit 9, Juliana immediately erases it. If they continue this for a long time, what is the 400<sup>th</sup> number that Juliana will erase?



NOTE: In solving this problem, it may be helpful to use the fact that a number is divisible by 9 exactly when the sum of its digits is divisible by 9. For example, the number 214578 is divisible by 9 since  $2 + 1 + 4 + 5 + 7 + 8 = 27$ , which is divisible by 9. In fact,  $214578 = 9 \times 23842$ .