



Problem of the Week

Problem E

Two Digits at a Time

The number 34 692 contains 5 digits, and so we say its digit length is 5. The first digit of 34 692 is 3. Also, the two-digit integers formed by choosing any pair of consecutive digits, that is, 34, 46, 69, and 92, are all divisible by either 17 or 23.

An integer with digit length 2022 has first digit 3. This integer also has the property that the two-digit integers formed by choosing any pair of consecutive digits are all divisible by either 17 or 23.

List all of the possibilities for the last three digits of this integer.

