



## Problem of the Week

### Problem D

#### ABACUS Counting

We are going to count with the abacus. To be more precise, we are going to count certain six letter arrangements of the letters of the word *ABACUS* in which every letter is used exactly once.

The six letters, *A*, *B*, *A*, *C*, *U*, and *S* are arranged to form six letter “words”. When examining the “words”, how many of them have the vowels *A*, *A* and *U* appearing in alphabetical order and the consonants *B*, *C* and *S* not appearing in alphabetical order. The vowels may or may not be adjacent to each other and the consonants may or may not be adjacent to each other.

For example, each of *CAAUSB* and *ASAUCB* are valid arrangements but *ABACUS*, *CUAASB* and *AUABCS* are invalid arrangements.

