



## Problem of the Week

### Problem C

### CADET

We can take any word and rearrange all the letters to get another “word”. These new “words” may be nonsensical. For example, you can rearrange the letters in *MATH* to get *MTHA*. Geordie wants to rearrange all the letters in the word *CADET*. However, he uses the following rules:

- the letters *A* and *D* must be beside each other, and
- the letters *E* and *T* must be beside each other.

How many different arrangements of the word *CADET* can Geordie make if he follows these rules?



NOTE: *ADCET* and *ADTEC* are acceptable words, while *ADTCE* is not.