

## Problem of the Week

### Problem E

#### The Chances of This?

As part of their annual training, Santa's eight reindeer, Dasher, Dancer, Prancer, Vixen, Comet, Cupid, Donner, Blitzen, participate in reindeer games. Rudolph was not allowed to play in any reindeer games.

In one of the games, the reindeer must arrange themselves in a line. There are a few rules that the reindeer must follow. First, reindeer with the letter *r* in their name cannot stand together in adjacent positions in the line. Second, since Donner and Blitzen look so much alike, they can never stand in adjacent positions in the line. The diagram below illustrates one possible valid arrangement of the reindeer.

The reindeer randomly organize themselves in the line. What is the probability that they arrange themselves in a correct order?

