**Binary string generating algorithm game for two people**

**(as told in Ivars Peterson's "Islands of Truth")**

Somebody **A** writes down a secret string of six 0s and 1s in any order.

Somebody else **B** writes down four 'random' six-strings. **A** scores them giving one mark for every digit that is correctly placed. This is where it departs from guessing games. The two highest scoring strings (or a choice from the highest scoring strings) are then written down twice to make four strings, e.g. if 000111 and 110101 were the highest scoring strings the next display would be:

000111

110101

000111

110101

The first two are cut at the same arbitrary point, swapped and re-spliced together to make four new strings of six. The second two are cut at another point and similarly swapped and re-spliced.

e.g. from the four strings above we could have:

000`101

110`111

0`10101

1`00111

The new strings are scored by **A** and the whole process is repeated.

He says the process leads automatically to the correct string, but in trials I found it did not necessarily. Try it a few times to see what goes wrong. How can the process be tweaked so that it works? I contacted Ivars to query this and ask for its source. He did not know its source and said that some generating algorithms do not always work for small strings, which this is, without more rules. (He did not say this in his original book).

Good luck!