## FLORENTIN SMARANDACHE Methods for Solving Letter Series

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# **METHODS FOR SOLVING LETTER SERIES**

Letter series problems occur in many American tests for measuring quantitative ability of supervisory personnel.

They are more difficult than number-series used for measuring mathematical ability because are unusual and complex.

According to the English alphabetic order:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

as well as to the a given sequence of letters, the equation consists of finding letters of the sequence which obey same rules.

For example, let  $b d f h j \dots$  be a given sequence; find the next two letters in this series.

Of course they are l n because the letters are taken two by two from the alphabet:  $b \notin d \notin f \notin h \not i \not k l \not m n$ .

In order to solve easier letter –series we transform them into number-series, and in this case it's simpler to use some well-known mathematical procedures.

#### Method I.

Associate to each letter from the alphabet a number in this way:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

Sample: d c i h n m ... becomes 14,3; 9,8; 14,13..., whence the next two numbers will be 19, 18, i.e. s r

#### Method II.

Let  $\mathcal{O}(\mathcal{L})$  be the order of the letter  $\mathcal{L}$  in the above succession. For example  $\mathcal{O}(F)=6$ ,  $\mathcal{O}(S)=19$ , etc.

According to the given sequence associate the number zero (0) to its first letter, for the second one the difference between second letter's order and first letter's order,

Sample:  $b f e c g k j h \dots$  becomes  $\underline{0}, \underline{4}, -1, -2; \underline{4}, -1, -2; \dots$ , whence the

next numbers will be 4; 4, -1, -2; equivalent to l p o m.

See the rule:



### REFERENCE

Passbooks for career opportunities, Computer Aptitude Test (CAT), New York, 1983, National Learning Corporation.