

JUNIOR DIVISION PROGRAMMING PROBLEM

WRAP AROUND CODE

PROBLEM: This is yet another in a long list of ACSL code programs. You would think we would have run out of them by now. In this program you will be given a letter to encode. The difference here is that different rules are used for different letters and the counting process can cause you to wrap around the alphabet. Using the numerical value of each letter (A=1, B=2, ... Z= 26) the rules are as follows:

If the letter is between the given letters, inclusive:	The number of letters to count is given by:
A – E	Multiply its numerical value by 2
F – J	Divide its numerical value by 3. Multiply the integer remainder by 5
K – O	Divide its numerical value by 4. Multiply the integer part of the quotient by 8.
P – T	Multiply the sum of the digits of its numerical value by 10
U- Z	Find the largest integer factor of its numerical value less than the value itself. Multiply it by 12.

As an example if the letter to encode is a B, the B has a numerical value of 2 and encodes to a 4 and becomes a D, the 4th letter of the alphabet. The G has a numerical value of 7. It encodes to a 5 and becomes an E. The numerical value of Z is 26. Its largest factor is 13. You must count 156 (13 * 12) letters. This has the effect of wrapping around the alphabet 6 complete times and ending at Z. If a numerical value of zero is evaluated print a # symbol.

INPUT: There will be 5 input lines. Each will consist of an upper case letter.

OUTPUT: For each input line, print the encoded letter it produces.

SAMPLE INPUT

1. B
2. G
3. Z
4. T
5. K

SAMPLE OUTPUT

1. D
2. E
3. Z
4. T
5. P

Note: Students have 72 hours in which to submit a solution. Students may not consult any person for assistance. The program must accept all the data and print all the solutions in one RUN of the program. We suggest that you print the solution for each input prior to entering the next input since, if the program stops, you will not be allowed to enter the remaining data.. Make sure that you put your name, your school name and your division at the top of your program file. Advisors must send to ACSL the program file of all students who score a 10 for the contest.

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AMERICAN COMPUTER SCIENCE LEAGUE

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CONTEST #1

WRAP AROUND CODE

Test Data

1. E
2. H
3. M
4. P
5. V

Test Solutions

1. J
2. J
3. X
4. R
5. B