Multiples of three P61930_en

A well-kown mathematical property states that a natural number is a multiple of three if and only if the sum of its digits is also a multiple of three. For instance, the sum of the digits of 8472 is $8 + 4 + 7 + 2 = 21$, which is a multiple of three. Therefore, 8472 is also a multiple of three.

Implement a recursive function that tells if a strictly positive natural number n is a multiple of three or not.

bool *is_multiple_3* (**int** n);

Interface

C++	**bool** *is_multiple_3* (**int** n);
C	**int** *is_multiple_3* (**int** n);
Java	**public static boolean** *isMultiple3*(**int** n);
Python	*is_multiple_3* (n) # returns bool
	is_multiple_3 (n: *int*) $\rightarrow$ *bool*

Solve this problem using a recursive function to return the sum of the digits of a natural number n.

int *sum_of_digits* (**int** n);

Interface

C++	**int** *sum_of_digits* (**int** n);
C	**int** *sum_of_digits* (**int** n);
Java	**public static int** *sumOfDigits*(**int** n);
Python	*sum_of_digits* (n) # returns int
	sum_of_digits (n: *int*) $\rightarrow$ *int*

Observation

Here, you are allowed to use the operations of division and integer remainder only with the number 10. Otherwise, this exercise would be totally trivial!

Problem information

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