
Haskell — Computations (1)

P13133_en

These problems are inspired in some of the problems from Project Euler. You can find them at <https://projecteuler.net>.

- Write a function `sumMultiples35 :: Integer → Integer` that, given a natural n , returns the sum of all multiples of 3 or 5 below n .
- Write a function `fibonacci :: Int → Integer` that, given a natural n , returns the n -th element of the Fibonacci sequence.
- Write a function `sumEvenFibonacci :: Integer → Integer` that, given a natural n , returns the sum of all even elements less than n in the Fibonacci sequence.
- Write a function `largestPrimeFactor :: Int → Int` that, given a natural $n \geq 1$, returns the greatest prime factor of n .
- Write a function `isPalindromic :: Integer → Bool` that, given a natural n , returns whether n is palindromic, that is, if n can be read in the same way from left to right than from right to left.

Scoring

- **test-1a:** Function `sumMultiples35` for $n \leq 1000$. 10 Points
- **test-1b:** Function `sumMultiples35` for big n . 10 Points
- **test-2a:** Function `fibonacci` for $n \leq 20$. 10 Points
- **test-2b:** Function `fibonacci` for big n . 10 Points
- **test-3:** Function `sumEvenFibonacci`. 20 Points
- **test-4:** Function `largestPrimeFactor`. 20 Points
- **test-5:** Function `isPalindromic`. 20 Points

Sample input

```
sumMultiples35 10
fibonacci 10
sumEvenFibonacci 10
largestPrimeFactor 13195
isPalindromic 9062609
```

Sample output

```
23
55
10
29
True
```

Problem information

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