Haskell — Functions with numbers P77907_en

In this problem you have to implement several functions in Haskell. You do not need to ask permission to write auxiliary functions, of course you can!

1. Write a function *absValue* :: **Int** → **Int** that, given an integer, returns its absolute value.
2. Write a function *power* :: **Int** → **Int** → **Int** that, given an integer x and a natural p, returns the$p$-th power of x, that is, x^p.
3. Write a function *isPrime* :: **Int** → **Bool** that, given a natural, tells whether it is a prime number or not.
4. Write a function *slowFib* :: **Int** → **Int** that returns the n-th element of the Fibonacci sequence using the recursive algorithm that defines it ($f(0) = 0$, $f(1) = 1$, $f(n) = f(n-1) + f(n-2)$ for $n \geq 2$).
5. Write a function *quickFib* :: **Int** → **Int** that returns the n-th element of the Fibonacci sequence using a more efficient algorithm.

Scoring

Each function scores 20 points.

Sample input

```
absValue (-666)
power 2 3
isPrime 17
slowFib 5
quickFib 40
```

Sample output

```
666
8
True
5
102334155
```

Problem information

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