Exercise Set 6 — 26 October

6.1 Booleans and numbers

(Continued from exercise 5.)

Implement an evaluator based on the small-step evaluation relation for the language of booleans Bool and natural numbers Nat, as in the textbook.

```
data Term  =  Tru
           |  Fls
           |  If Term Term Term
           |  Zero
           |  Succ Term
           |  Pred Term
           |  IsZero Term
           deriving Eq
...

isValue :: Term -> Bool
...

isNumericValue :: Term -> Bool
...

eval1 :: Term -> Maybe Term   -- the one-step evaluation relation represented as a function
...

eval :: Term -> Term    -- multi-step reduction (iterates eval1 as many times as possible)
...
```

Your task is to provide the missing definitions, in place of the ellipses . . . above.