Homework 3 Solutions

98-317: Hype for Types

Due: 6 Februrary 2018 at 11:59 PM

1 Required

Req Task 1 Write the proposition

$$A \to (B \to B)$$

as a type, and then write an expression (proof) of that type.

Solution
Type: `'a -> ('b -> 'b)`
Program: `fn x => fn y => y`

Req Task 2 Write the proposition

$$A \wedge (A \to B) \to B$$

as a type, and then write an expression (proof) of that type.

Solution
Type: `'a * ('a -> 'b) -> 'b`
Program: `fn (x, f) => f x`

Req Task 3 Write the proposition

$$(A \vee B \to C) \to ((A \to C) \wedge (B \to C))$$

as a type, and then write an expression (proof) of that type.

Solution
Type: `(('a, 'b) either -> 'c) -> ('a -> 'c) * ('b -> 'c)`
Program: `fn f => (fn x => f (INL x), fn y => f (INR y))`