COMP 333 Fall 2019

Generics, Parametric Polymorphism, and Higher-Order Functions in Swift

1.) Define	a function	that takes	a value	of some	generic ty	ype A,	and return	s the	same
value.									

2.) Define a function that takes values of generic types ${\tt A}$ and ${\tt B}$, and returns a pair of these values.

3.) Write the body of the following Swift function. As a hint, only one possible body (which typechecks) exists.

```
func myFunc<A, B, C, D>(a: A, b: B, f1: (A) -> C, f2: (A, C) -> D) -> (C, D) {
```

	4.)	Consider the followi	ng enum definition	, defining the	structure of	a linked list
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```
indirect enum List<A> {
  case cons(A, List<A>)
  case empty
}
```

4.a.) Define the map function, which has the following signature:

```
func map<A, B>(list: List<A>, f: (A) \rightarrow B) \rightarrow List<B> {
```

4.b.) Define the foldLeft function, which has the following signature: