# Quiz: Property Based Testing 2

Recall the following three properties (in Scala Check) from Chapter 8:

```
given Arbitrary[List[Int]] =
   Arbitrary (Gen.listOf (Gen.choose (1,100)))

forAll { (ns: List[Int]) =>
    ns.reverse.reverse == ns) }

forAll { (ns: List[Int]) =>
    ns.headOption == ns.reverse.lastOption) }

forAll { (ns: List[Int]) =>
    ns.reverse == ns) }
```

**1** What changes are necessary so that the second property can be written:

```
forAll { (ns: List[Int]) =>
     ns.head == ns.reverse.last }
```

**2** Write a property stating that a sum of a list of positive numbers is a positive number.

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   Arbitrary (Gen.listOf (Gen.choose (1,100)))

forAll { (ns: List[Int]) =>
    ns.reverse.reverse == ns) }

forAll { (ns: List[Int]) =>
    ns.headOption == ns.reverse.lastOption) }

forAll { (ns: List[Int]) =>
    ns.reverse == ns) }
```

**1** The second property can be written without option, if we generate non-empty lists, for example:

```
given arbLst[A: Arbitrary]: Arbitrary[List[A]] =
  Arbitrary(Gen.listOf(summon[Arbitrary[A]].arbitrary).filter { ! _.isEmpty })
```

**2** The sum of a list of positive integers is a positive:

```
forAll { (ns: List[Int]) => ns.sum > 0 }
```