Homework 5

Statement	Variable Values
`List<Integer> list = new SomeListImplementation<>();`	
	list = [ ]
`list.add(7);`	
	list = [7]
`list.add(-12);`	
	list = [7, -12]
`list.add(3);`	
	list = [7, -12, 3]
`int x = list.size();`	
	list = [7, -12, 3] x = 3
`x = list.get(1);`	
	list = [7, -12, 3] x = -12
`x = list.remove(0);`	
	list = [-12, 3] x = 7
`x = list.remove(1);`	
	list = [-12] x = 3
`x = list.size();`	
	list = [-12] x = 1

4. It allows for better optimization from the compiler by not including these operations if the variables being worked on do not support any particular optional operation.

5. Benefits of this decision would include easier bug catching if a programmer does not intend for a null element to ever encounter a function which it is not allowed in, however a pitfall of this decision would be in the case of a programmer needing to use a list for things that would be good for representing data by position, the programmer would not be able to keep consistent positioning if any element did not have a value at a given position.