1. Recall that, in denotational semantics, the state is a triple $<\text{mem}, \text{i}, \text{o}>$.

(a) Which component(s) of the state are changed by a read instruction?  
**Answer:** i, mem

(b) Which component(s) of the state are changed by a write instruction?  
**Answer:** o (only)

(c) Which component(s) of the state are changed by an assignment?  
**Answer:** mem

2. What is the denotational semantics of the following program, where the initial input stream contains only the integer $z$?

```plaintext
read(n);
i := n+1;
write(i);
```

**Hint:** it is a very short answer!

**Answer:** $<z+1>$. Also acceptable: $z + 1$, although technically the answer is a sequence.