Ejercicio 1

```
return x >>= f
```

$\equiv \langle def.return \rangle$

```
State (\s -> (x, s)) >>= f
```

$\equiv \langle def. \gg= \rangle$

```
State (\s -> let (v, s') = runState (State (\s -> (x, s))) s
              in runState (f v) s')
```

$\equiv \langle def.runState \rangle$

```
State (\s -> let (v, s') = (\s -> (x, s)) s
              in runState (f v) s')
```

$\equiv_{\beta}$

```
State (\s -> let (v, s') = (x, s)
              in runState (f v) s')
```

$\equiv \langle def.let \rangle$

```
State (\s -> runState (f x) s)
```

$\equiv_{\eta}$

```
State (runState (f x))
```

$\equiv \langle def.\circ \rangle$

```
(State . runState) (f x)
```

$\equiv \langle State \circ runState \equiv id \rangle$

```
f x
```