```
sn
                                                  stack
  val
                                n
                                        rn
                                                             → controller
                                                continue
                                       after-
                                                             fact-
                  1
                                       fact
                                                             done
(controller
  (assign continue (label fact-done))
                                           ; set up final return address
fact-loop
  (test (op =) (reg n) (const 1))
  (branch (label base-case))
   ;; Set up for the recursive call by saving n and continue.
   :: Set up continue so that the computation will continue
   :: at after-fact when the subroutine returns.
  (save continue)
  (save n)
  (assign n (op -) (reg n) (const 1))
  (assign continue (label after-fact))
  (goto (label fact-loop))
after-fact
  (restore n)
  (restore continue)
  (assign val (op *) (reg n) (reg val))
                                           ; val now contains n(n - 1)!
  (goto (reg continue))
                                           : return to caller
base-case
  (assign val (const 1))
                                           ; base case: 1! = 1
  (goto (reg continue))
                                           : return to caller
```

fact-done)