CSC104 Quiz #6

Name:

Assume that DrRacket has been started up in the Intermediate Student with lambda language, and that the following commands have been run.

(require picturing-programs)

; s is a solid red square
(define s (square 20 "solid" "red"))

; switch-red-green : color -> color
; Produce new color with the red and green
; components of c switched, other the same
(check-expect (switch-red-green (make-color 1 2 3 4))
(make-color 2 1 3 4))
(define (switch-red-green c)
  (make-color
    (color-green c)
    (color-red c)
    (color-blue c)
    (color-alpha c)))

For full marks, describe or draw what is produced by 3 out of 4 of the following commands. You may find it useful to know that (list-ref (image->color-list s) 7) produces (make-color 255 0 0 255).

1. (map-image switch-red-green s)
   Solution: A solid green square (of size 10)

2. (map-image
       switch-red-green
       (map-image switch-red-green s))
   Solution: A solid red square (of size 10)

3. (color-list->bitmap
       (image->color-list s) 4 100)
   Solution: A solid red rectangle 4 dots wide by 100 dots tall

4. (list-ref (image->color-list s) 3)
   Solution: (make-color 255 0 0 255)