SECOND QUIZ

You have 15 minutes from the start of class to complete this quiz. Read the questions with care; work with deliberate speed. Don't give us more than we ask for. The usual instructions apply. Good luck!

Problem 1 (4 points)

Evaluate each of the following expressions. The functions `even?` and `odd?` are predefined in DrScheme; `even?` returns true if its argument is an even number and `odd?` returns true if its argument is odd.

(a)
```
(define take-temperature
    (lambda (temp)
       (cond
          ((not (number? temp)) "Bad input")
          ((>= temp 100) "High fever")
          ((> temp 98.6) "Fever")
          ((= temp 98.6) "Normal")
          (else "Below normal")))))

  (take-temperature 99)
```

(b) `(and (number? 'in4matx) (even? 4))`

(c) `(not (or (odd? 18) (even? 19)))`

(d)
```
(* 4
    (cond
       ((string=? "Hello" "Hola") 6)
       ((symbol=? 'Aloha 'Aloha) 5)
       (else 10)))
```

Problem 2 (5 points)

Complete the following function definition according to the contract and purpose given.
```
;; weight-per-inch: symbol -> number
;; If input is 'maple, return 1; if it's 'aluminum, return 0.7;
;; if it's 'plastic, return 0.2; otherwise return zero.
(define weight-per-inch
    (lambda (material)




))
```

Problem 3 (16 points)

(a) (2 points) Define a structure to represent a picture frame with a width, a height, a material, and a weight. The width and height will be numbers of inches, the material will be a symbol, and the weight will be a number of ounces.

(b) (2 points) Write an expression that constructs and returns a picture frame made of maple that's 24 inches tall, 36 inches wide, and weighs 96 ounces. (Pay close attention to what we're asking for.)

(c) (4 points) Complete the following function definition according to the contract and purpose given.

```
;; picture-frame-perimeter: picture-frame -> number
;; Compute the total length of framing material necessary for the frame (top, bottom,
;; and both sides)
;; Example:  (picture-frame-perimeter (make-picture-frame 5 7 'plastic 19)) returns 24
(define picture-frame-perimeter
     (lambda (PF)



))
```

(d) (8 points) Complete the following function definition according to the contract and purpose given. Where appropriate, use the functions you defined above.

```
;; frame-with-weight: picture-frame -> picture-frame
;; Return a (newly created) picture-frame based on the input frame, but with the
;; weight calculated depending on the frame's perimeter and material.
;; Example:  (frame-with-weight (make-picture-frame 5 7 'plastic 19)) returns
;;              (make-picture-frame 5 7 'plastic 4.8)
(define frame-with-weight
     (lambda (PF)



))
```