Sem.I Final Exam

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1. Using the code below, explain:

    (a) Is `posn` a reasonable model for this animation? Explain why or why not.

    (b) Write a reasonable signature for `mouse-1`. Specify the actual type of everything for this question, don't just say "x".

    (c) Write a good check-expect showing that you know what `mouse-1` does.

```
(define (mouse-1 a b c d)
  (cond [(string=? d "button-down")
         (- b 10)]
        [(string=? d "drag")
         (- c 50)]
        [else
         (+ a b c)]))
(define (draw-h x)
  (place-image (circle 10 "solid" "red")
               x (- 400 x)
               (empty-scene 600 400)))
(big-bang 200
  (on-draw draw-h)
  (on-mouse mouse-1))
```

2. The function Nate wants to use as his key handler has the signature `key-2: posn -> posn`, and it is supposed to increase the `y` coordinate by 10 and edcrease the `x` coordinate by 1.

```
(define (nate-k p)
   (make-posn (posn-y p) (- (posn-x p) 11)))
```

   (a) Analyze the check-expect below in a sentence or two.

```
(check-expect (nate-1 (make-posn 51 40))
              (make-posn 40 30))
```

   (b) Is the `nate-k` function reasonable to use as a key handler? Explain.

3.