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Questions 1-6

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Question 1

1/1 point (graded)

What is the value produced by the expression below?

```
(cons (+ 1 1) (cons 1 empty))
```

○ 3

○ 2

○ (cons 3 empty)

◉ (cons 2 (cons 1 empty))

✔

Explanation

The expression `(+ 1 1)` evaluates to 2, giving the expression `(cons 2 (cons 1 empty))`

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Questions 2

1/1 point (graded)

Consider:

```
(define L1 (cons "Systematic" (cons "Program" (cons "Design" empty))))
(define L2 (cons 1 empty))
```

What is the value produced by the expression `(first L1)`?

○ (cons "Systematic Program Design" empty)

○ (cons "Program" (cons "Design" empty))

○ (cons "Systematic" empty)

◉ "Systematic"

○ "Design"

○ empty

✔

Explanation

The first element in the list `(cons "Systematic" (cons "Program" (cons "Design" empty)))` is `"Systematic"`.

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Question 3

1/1 point (graded)

What is the value produced by the expression `(rest L1)`?

○ (cons "Systematic Program Design" empty)

◉ (cons "Program" (cons "Design" empty))

○ (cons "Systematic" empty)

○ "Systematic"

○ "Design"

○ empty

✔

Explanation
The rest of the list `(cons "Systematic" (cons "Program" (cons "Design" empty)))` is the list `(cons "Program" (cons "Design" empty))`.

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Question 4
1/1 point (graded)

What is the value produced by the expression `(empty? L2)`?

○ `(cons 1 empty)`

○ `empty`

○ `true`

◉ `false`

✔

Explanation
The list `(cons 1 empty)` is not empty, so the expression produces `false`.

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Question 5
1/1 point (graded)

What is the value produced by the expression `(empty? (rest L2))`?

○ `(cons 1 empty)`

○ `empty`

◉ `true`

○ `false`

✔

Explanation
The rest of the list `(cons 1 empty)` is `empty` so the expression produces `true`.

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Question 6
1/1 point (graded)

How many elements does this list have?

`(cons "a" (cons (string-append "b" "c") (cons "d" empty)))`

○ 2

◉ 3

○ 4

○ 5

✔

Explanation

There are 3 elements, `"a"`, `(string-append "b" "c")` or `"bc"`, and `"d"`

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