

1. `(* 1 2 3 (+ 4 5 6))`
`(* 1 2)`
`((* (* 1 2) 3))`
`((* (* 1 2 3) (+ 4 5)))`
`((* (* 1 2) 3) (+ (+ 4 5) 6))`

2. When `rest` is used, it takes the remaining elements of a list and turns them into a separate list than the first element.

3.a. `(first(rest))`

b. The second element is `(4 5)`. It's the second list inside of the initial list not including the nested list inside the first list.

4. No there are not. All s-expressions are ultimately binary, so each set of parentheses will have one arithmetic expression. Since s-expressions use recursion, it will perform equations in such a manner.

`(* (+ (/ 9 3) 2) 1)` will do $((9/3)+2)*1$