

1. **Q(a b x d) = (car (cdr (cdr '(a b x d))))**
 - $\text{cdr '(a b x d)} = (b\ x\ d)$
 - $\text{cdr (b x d)} = (x\ d)$
 - $\text{car (x d)} = x$
2. **(a (b (x) d)) = (car (car (cdr (car (cdr '(a (b (x) d)))))))**
 - $\text{cdr '(a (b (x) d))} = ((b\ (x)\ d))$
 - $\text{car } ((b\ (x)\ d)) = (x\ d)$
 - $\text{car (x d)} = x$
3. **(((a (b (x) d)))) = (car (car (cdr (car (cdr (car (car '(((a (b (x) d))))))))))**
 - $\text{car '(((a (b (x) d))))} = ((a\ (b\ (x)\ d)))$
 - $\text{car } ((a\ (b\ (x)\ d))) = (a\ (b\ (x)\ d))$
 - $\text{cdr } (a\ (b\ (x)\ d)) = ((b\ (x)\ d))$
 - $\text{car } ((b\ (x)\ d)) = (x\ d)$
 - $\text{car (x d)} = x$

4.

a. (a b x d)

The cons cell representation is:

$(\text{cons 'a } (\text{cons 'b } (\text{cons 'x } (\text{cons 'd nil}))))$

b. (a (b (x) d))

The cons cell representation is:

$(\text{cons 'a } (\text{cons } (\text{cons 'b } (\text{cons } (\text{cons 'x } (\text{cons 'd nil})) \text{nil})) \text{nil}))$

c. (((a (b (x) d))))

The cons cell representation is:

$(\text{cons } (\text{cons } (\text{cons 'a } (\text{cons } (\text{cons 'b } (\text{cons } (\text{cons 'x nil}) (\text{cons 'd nil})))) \text{nil})) \text{nil}) \text{nil})$