Comp105-HW3

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1 question 22

(append (append xs ys) zs) =
(cons xs append(ys zs) =
(cons xs (cons(ys append(zs '()))))) = '(xs ys zs)

(append xs (append ys zs)) =
(append xs (cons ys zs)) =
(append xs '(ys zs)) =
(cons xs '(ys zs)) = (xs ys zs)

(xs ys zs) = (xs ys zs). thus they are the communicative

2 A

2.1 a

$xs \in \sigma \quad x \in \sigma$

$< cons(xxs), \rho, \sigma > \downarrow <' (xxs), \rho, \sigma' >$ if x='() $< cons(xxs), \rho, \sigma > \downarrow <' (xs), \rho, \sigma' >$
, ---
$< cdr(cons(xxs)), \rho, \sigma > \downarrow <' (xs), \rho, \sigma' >$

2.2 b

e1 = '() e2 = '(1 2 3)