

c) $[yyz \mid [yow \mid [yyc \mid [yvr \mid [yul \mid [YEG]]]]]]$ and $[A1, A2 \mid A3]$.

$$= [yyz \mid [yow \mid [yyc \mid [yvr \mid [yul, YEG]]]]]$$

$$= [yyz \mid [yow \mid [yyc \mid [yvr, yul, YEG]]]]$$

$$= [yyz \mid [yow \mid [yyc, yvr, yul, YEG]]]$$

$$= [yyz \mid [yow, yyc, yvr, yul, YEG]]$$

$$= [yyz, yow \mid [yyc, yvr, yul, YEG]]$$

$$A1 = yyz$$

$$A2 = yow$$

$$A3 = [yyc, yvr, yul, YEG]$$

\therefore can be made identical.

$$d) [apple, Z, bee \mid [Z, car, door]]$$

$$= [apple, Z, bee, Z, car, door]$$

$$= [apple, Z \mid [bee, Z, car, door]]$$

$$= [apple, Z \mid [bee, Z \mid [car, door]]]$$

$$= [apple, Z \mid [bee, Z \mid [car \mid [door]]]]$$

$$[X \mid [bee, Y \mid [Q \mid R]]]$$

apples
Z
car
door

$$X = apple, Y = Z, Q = car, R = door$$

\therefore cannot be made identical. there are two occurrences of $Y = Z$ in the first list, but only one occurrence in the second list.

e) $[z | [z | [[z | [[z]]]]]$ and $[b | \underbrace{Y}_{Z}]$

$= [z | [z | [z, [z]]]]$ $\underbrace{Z}_{Z}, [z, [z]]]$

$= [z | [z, [z, [z]]]]$ $Z = b$

$= [z, z, [z, [z]]]$

$= [b, b, [b, [b]]]$

\therefore can be made identical when $Z = b$ and $Y = b, [b, [b]]]$

f) $[U | [W | [U]]]$ and $[the, quick, brown, fox, W]$

$= [the | [quick | [brown]]]$ $= [the | [quick, brown, fox, W]]$

$= [the | [quick | [brown, fox, W]]]$
 $\underbrace{\hspace{1.5cm}}_{quick}$

$U = the, W = quick, U = brown$

\therefore cannot be made identical. The first list only accepts 3 elements while the second accepts 5 elements.

a. $[X, Y \mid Z]$ and $[p, q, r, s, t \mid [u, v, Y]]$

$$\begin{aligned} RS &= [p, q, r, s, t, u, v, Y] \\ &= [p, q \mid [r, s, t, u, v, Y]] \end{aligned}$$

$$X = p$$

$$Y = q$$

$$Z = [r, s, t, u, v, Y]$$

where Y can be any value

\therefore can be made identical