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a. [W, X, Y | Z] and [1, 2, 3, 4, 5 | [6, 7, X]]

Matches if

W = 1

X = 2

Y = 3

Z = [4, 5 | [6, 7, 2]]

List 1 = [W, X, Y | Z]

Substitute values:
⇨ [1, 2, 3 | [4, 5 | [6, 7, 2]]]

Rearranging list:

⇨ [1, 2, 3, 4, 5 | [6, 7, 2]]
⇨ [1, 2, 3, 4, 5, 6, 7, 2]

List 2 = [1, 2, 3, 4, 5 | [6, 7, X]]

Substitute values:

⇨ [1, 2, 3, 4, 5 | [6, 7, 2]]

Simplify:

⇨ [1, 2, 3, 4, 5, 6, 7, 2]

[1, 2, 3, 4, 5, 6, 7, 2] = [1, 2, 3, 4, 5, 6, 7, 2]

Therefore List1 = List2 when W = 1, X = 2, Y = 3, Z = [4, 5 | [6, 7, 2]]

b. [p | [q | [r | [s | [t | [V]]]]]] and [X, Y| Z]

Matches if
X = p
Y = q
Z = [r, s, t, V]

List1 = [p | [q | [r | [s | [t | [V]]]]]]

Rearranging list:
⇨ [p, q, r, s, t, V]

List2 = [X, Y| Z]

Substitute values:

⇨ [p, q | [r, s, t, V]]

Simplify list:

⇨ [p, q, r, s, t, V]

[p, q, r, s, t, V] = [p, q, r, s, t, V]

Therefore, List1 = List2 when X = p, Y = q, Z = [r, s, t, V]

c. [[Z | [x, y]], e, f, g] and [[a, [x, y]] | V]

List1 = [[Z | [x, y]], e, f, g]

Rearranging:
⇨ [[Z | [x, y]] | [e, f, g]
⇨ [[Z, x, y] | e, f, g]

List2 = [[a, [x, y]] | V]

These lists do not match. In list 1, [Z | [x, y]] = [Z, x, y] which has 3 elements, whereas in list 2, [a, [x, y]] only has two elements. Also, the values x,y are separate elements in list1, while they are a sub-list [x, y] in list2.

d. [[a], B, C | D] and [[a | [B]] | [C | D]]

List1 = [[a], B, C | D]

List2 = [[a | [B]] | [C | D]]

Rearranging:
⇨ [[a, B] | [C | D]]

[a], B != [a, B] therefore List1 and List2 do not match. In List1, the elements [a], and B are two separate members of the parent list. However in List2, [a, B] are grouped together as a sub-list as one member of the parent list.

e. [minus | [Y, X | [minus, Y | [X]]]] and [X, plus, minus | [X, Y, minus]]

List1 = [minus | [Y, X | [minus, Y | [X]]]]

Simplifying:
⇨ [minus | [Y, X | [minus, Y, X]]
⇨ [minus | [Y, X, minus, Y, X]]
⇨ [minus, Y, X, minus, Y, X]

List2 = [X, plus, minus | [X, Y, minus]]

Simplifying:
⇨ [X, plus, minus, X, Y, minus]

Matches if

X = minus

Y = plus

Substituting values in List1:

[minus, plus, minus, minus, plus, minus]

Substituting values in List2:

[minus, plus, minus, minus, plus, minus]

[minus, plus, minus, minus, plus, minus] = [minus, plus, minus, minus, plus, minus]

Therefore, List1 = List2 when X = minus, and Y = plus.

f. [bike | A] and [C | [C | [C | [C | [C]]]]]

List1 = [bike | A]

List2 = [C | [C | [C | [C | [C]]]]]

Simplifying
= [C | [C | [C | [C, C]]]]
= [C | [C | [C, C, C]]]
= [C | [C, C, C, C]]

Matches if
C = bike
A = [bike, bike, bike, bike]

Substituting values in List1:
[bike | [bike, bike, bike, bike]]

Substituting values in List2:

[bike | [bike, bike, bike, bike]

[bike | [bike, bike, bike, bike] = [bike | [bike, bike, bike, bike]

Therefore, List1 = List2 when C = bike and A = [bike, bike, bike, bike]

g. [a, b | [C | [D, E | C]]] and [F | [G, H, [], [[D]]]]

List1 = [a, b | [C | [D, E | C]]]

Simplifying:
⇨ [a, b, | [C, D, E | C]]
⇨ [a, b, C, D, E | C]

List2 = [F | [G, H, [], [[D]]]]

Rearranging:
⇨ [F, G, H, [], [[D]]]

Matches if

F = a

G = b

H = []

C = []

D = []

E = [[[]]]

Substituting values in List1:

[a, b, [], [], [[[]]] | []]

Simplifying:

⇨ [a, b, [], [], [[[]]]]

Substituting values in List2:

[a, b, [], [], [[[]]]]

[a, b, [], [], [[[]]]] = [a, b, [], [], [[[]]]

Therefore List1 = List2 when F = a, G = b, H = [], C = [], D = [], E = [[[]]].

h. [Fox, [[in], socks], [on], box, on | [[knox]]] and [[The, cat], [[in], The], Hat | [Comes | Back]]

List1 = [Fox, [[in], socks], [on], box, on | [[knox]]]

Simplifying:
⇨ [Fox, [[in], socks], [on], box, on, [knox]]

List2 = [[The, cat], [[in], The], Hat | [Comes | Back]]

Simplifying:
⇨ [[The, cat], [[in], The], Hat, Comes | Back]

Matches if

Fox = [socks, cat]

The = socks

Hat = [on]

Comes = box

Back = [on, [knox]]

Substituting values into List1:

[[socks, cat], [[in], socks], [on], box, on, [knox]]

Substituting values into List2:

[[socks, cat], [[in], socks], [on], box | [on, [knox]]]

Simplifying:

⇨ [[socks, cat], [[in], socks], [on], box on, [knox]]

[[socks, cat], [[in], socks], [on], box on, [knox]] = [[socks, cat], [[in], socks], [on], box on, [knox]].

Therefore List1 = List2 when Fox = [socks, cat], The = socks, Hat = [on], Comes = box, Back = [on, [knox]].