“DS/AI 프로그래밍”

5주차 Auto Differentiation

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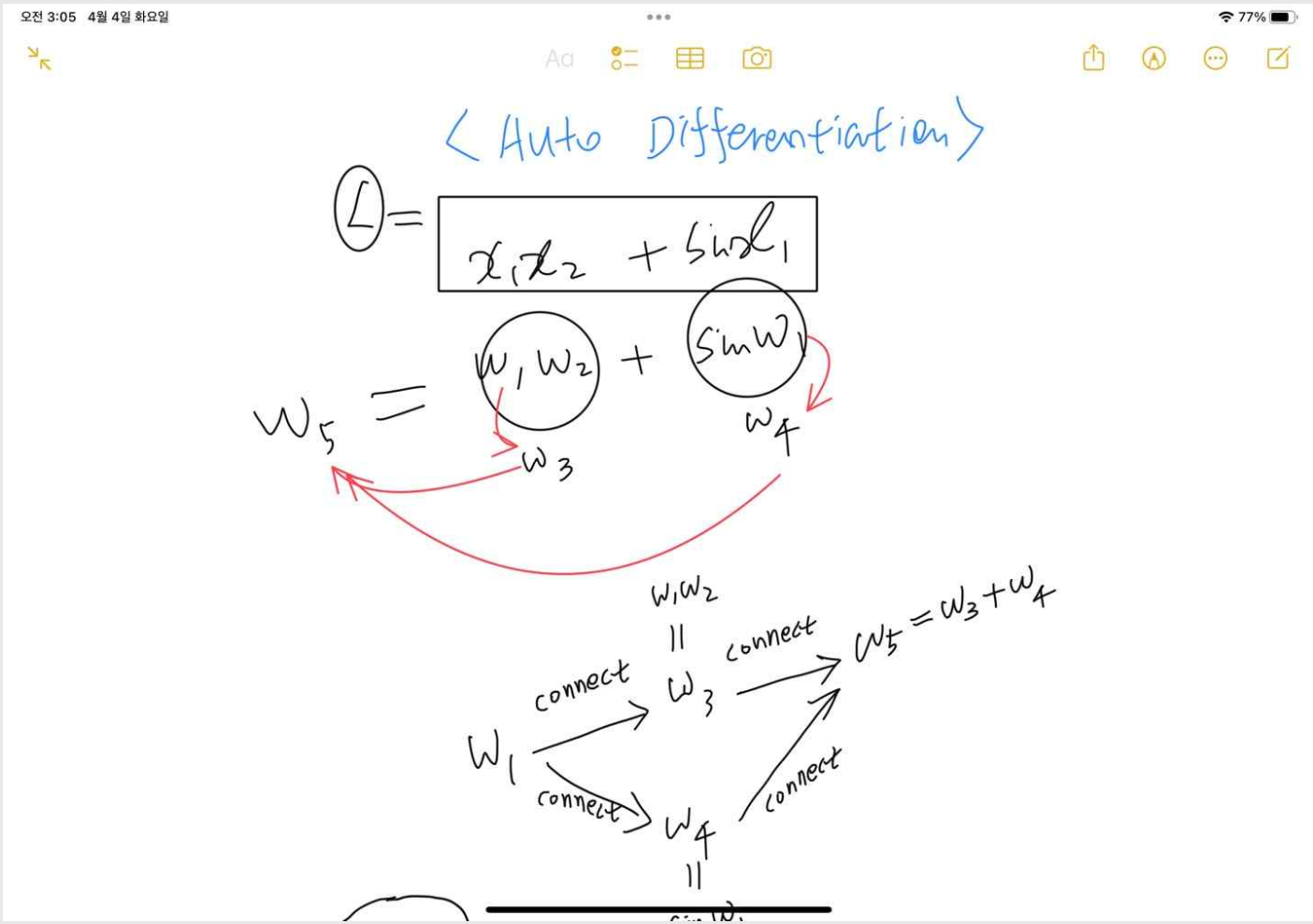
오전 3:05 4월 4일 화요일 77%

<Auto Differentiation>

$$L = \boxed{x_1 x_2 + \sin x_1}$$

$$w_5 = \underbrace{w_1 w_2}_{w_3} + \underbrace{\sin w_1}_{w_4}$$

$$\begin{tikzcd}
 & w_1 w_2 \arrow[d, equal] & \\
w_1 \arrow[ur, "\text{connect}"] \arrow[dr, "\text{connect}"'] & w_3 \arrow[r, "\text{connect}"] & w_5 = w_3 + w_4 \\
 & w_4 \arrow[ur, "\text{connect}"'] \arrow[d, equal] & \\
 & \sin w_1 &
\end{tikzcd}$$



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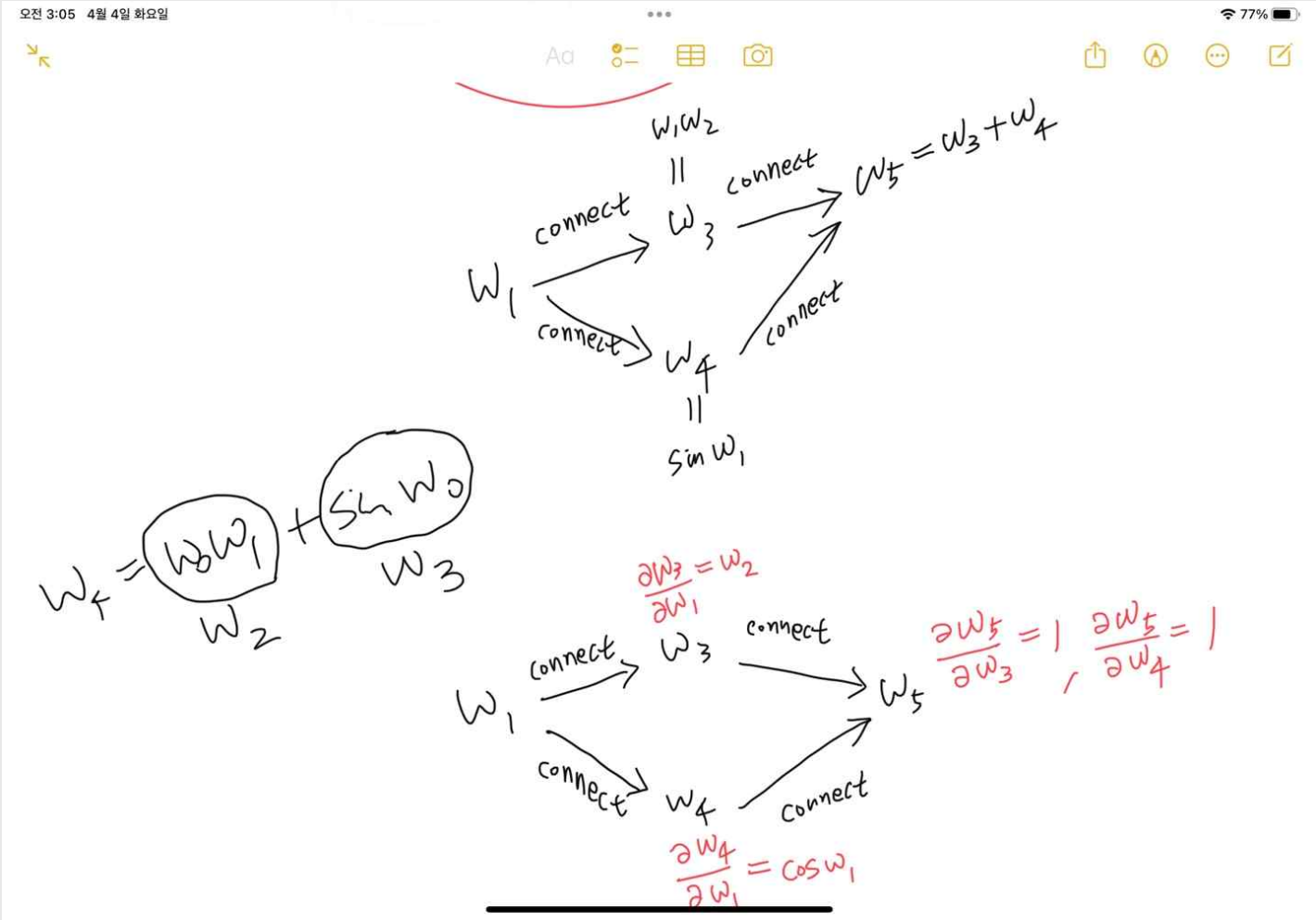

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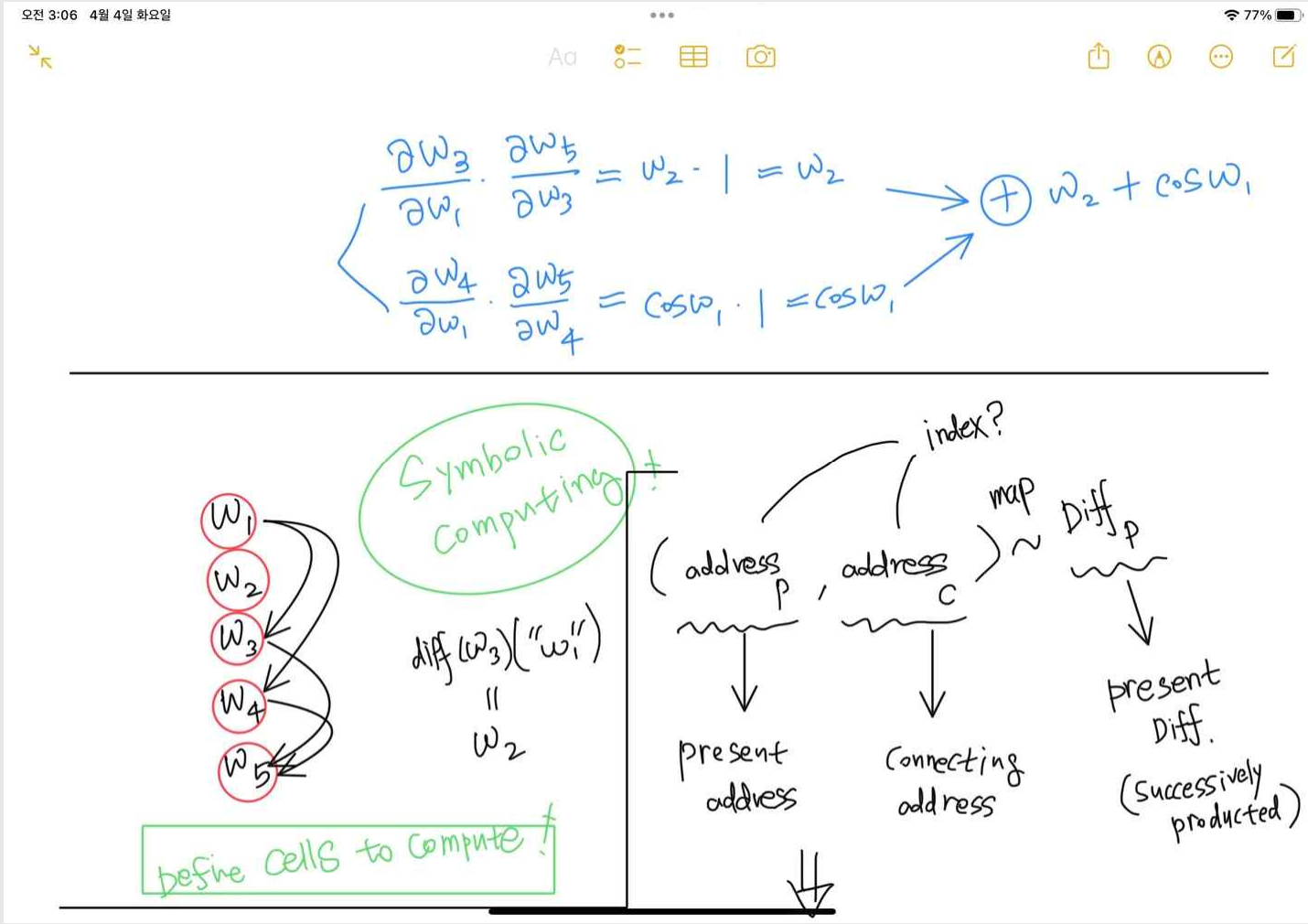

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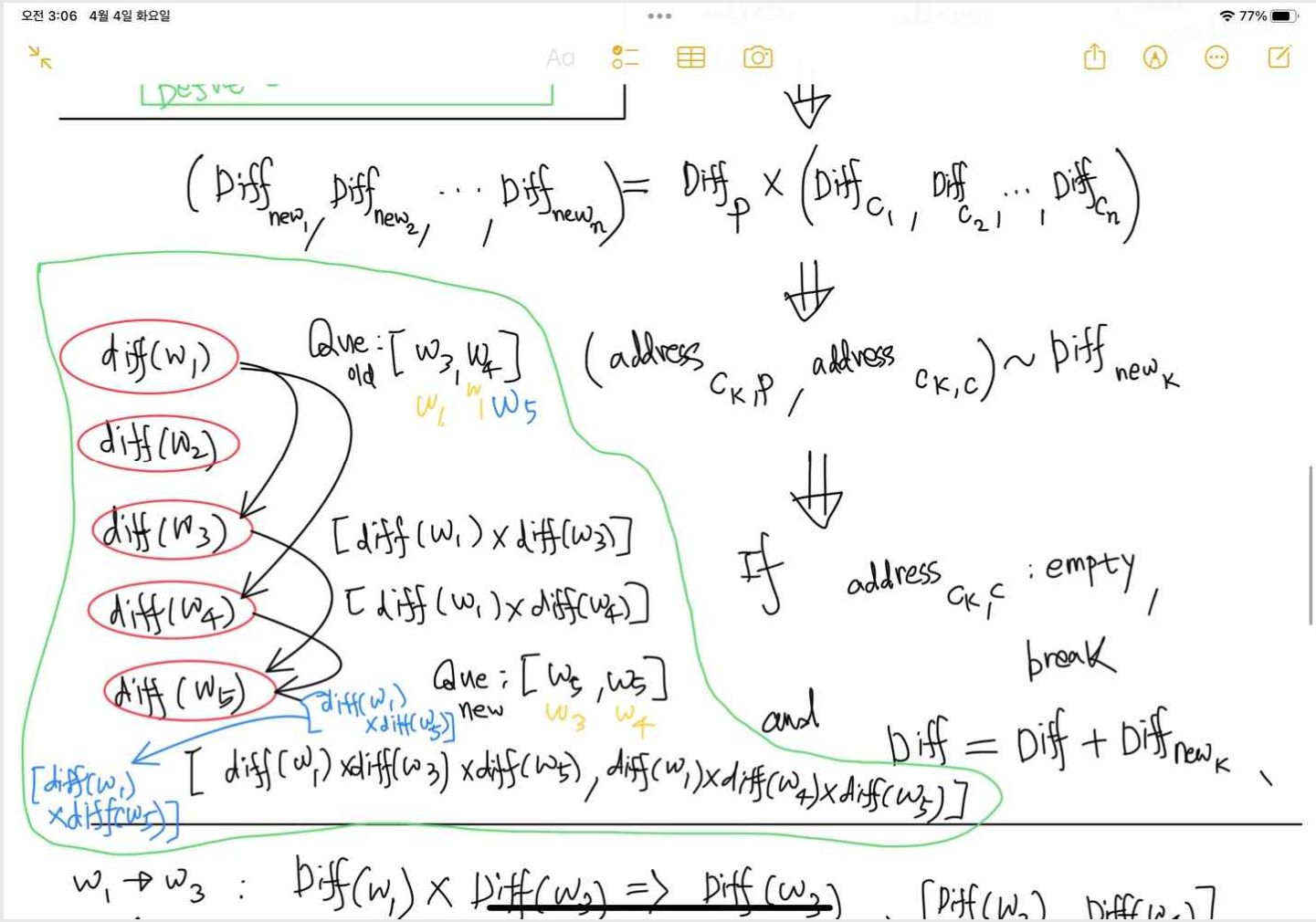

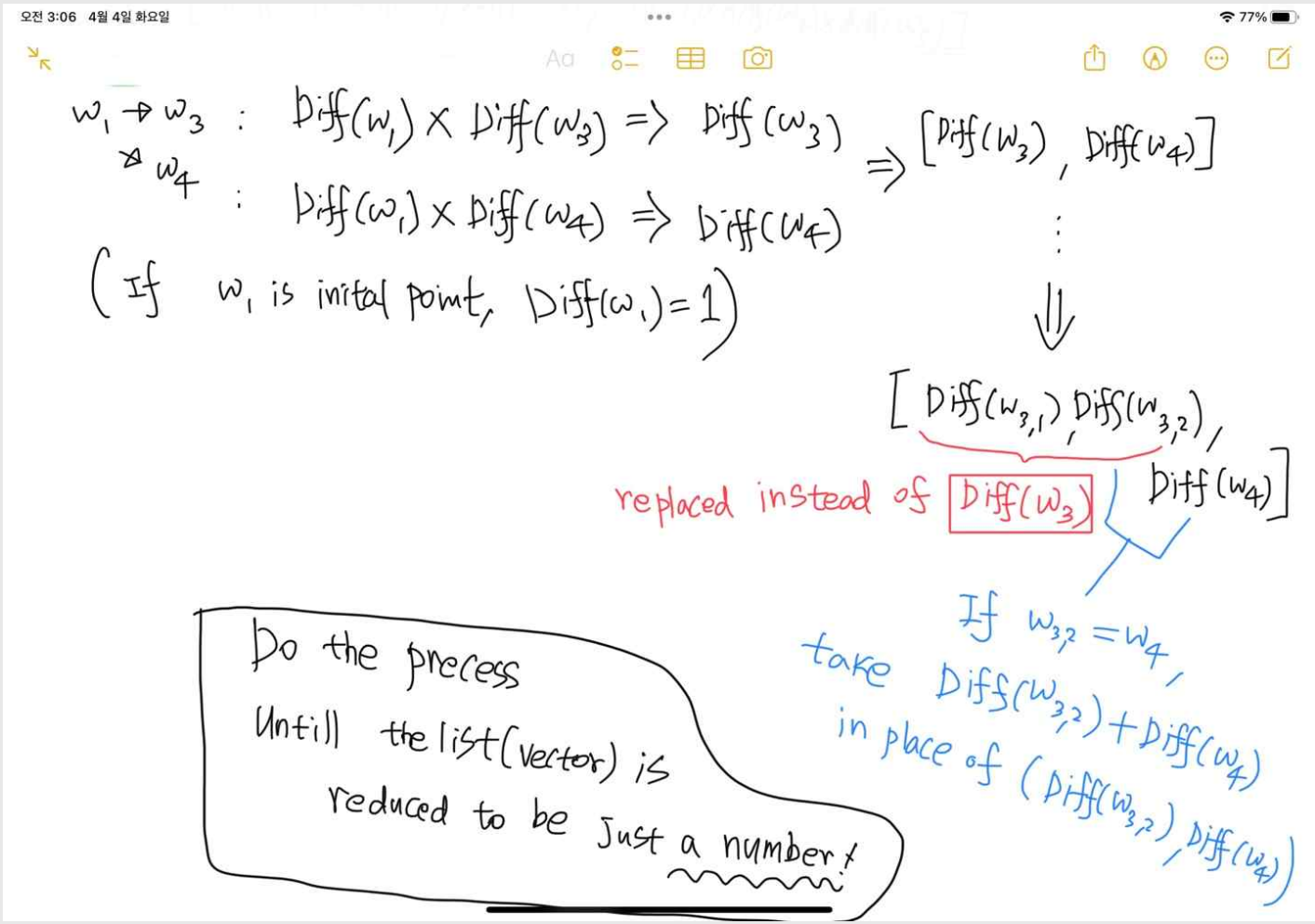
오전 3:06 4월 4일 화요일
77%
$w_1 \to w_3$: $Diff(w_1) \times Diff(w_3) \Rightarrow Diff(w_3)$
$\nearrow w_4$: $Diff(w_1) \times Diff(w_4) \Rightarrow Diff(w_4)$
$\Rightarrow [Diff(w_3), Diff(w_4)]$
(If w_1 is initial point, $Diff(w_1) = 1$)
$[Diff(w_{3,1}), Diff(w_{3,2}), Diff(w_4)]$
replaced instead of $Diff(w_3)$
If $w_{3,2} = w_4$, take $Diff(w_{3,2}) + Diff(w_4)$ in place of $(Diff(w_{3,2}), Diff(w_4))$
Do the precess
Untill the list(vector) is
reduced to be just a number!

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The End