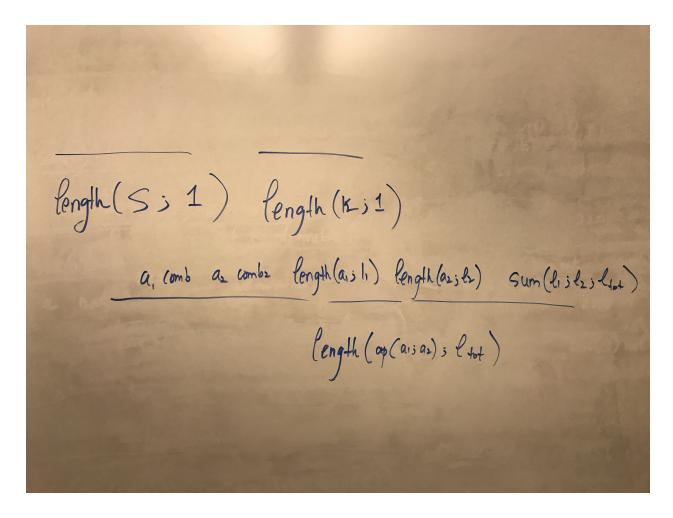
## **Exercise 3.1-3.3**

3.1



3.2

Exercise 3.1-3.3

Structure Ind on 
$$a_2$$
:

 $\times \mid \times \text{ comb} \mid_{C} a_2 \text{ comb}$ 
 $a_1 \text{ comb}$ 
 $a_2 \text{ is } S \qquad \begin{bmatrix} a_1/2 \\ a_2 \end{bmatrix} a_2 \stackrel{d}{=} S \text{ comb}$ 
 $a_1 \text{ comb}$ 
 $a_2 \text{ is } a_2 \text{ is } a_2 \text{ and}$ 
 $a_1'' \stackrel{d}{=} \begin{bmatrix} a_1/2 \\ a_2' \end{bmatrix} a_1 \text{ comb}$ 
 $a_2'' = \begin{bmatrix} a_1/2 \\ a_2' \end{bmatrix} a_2' \text{ comb}$ 
 $a_1'' \stackrel{d}{=} a_2 \begin{bmatrix} a_1/2 \\ a_2' \end{bmatrix} a_2' \text{ comb}$ 
 $a_2'' = \begin{bmatrix} a_1/2 \\ a_2' \end{bmatrix} a_2' \text{ comb}$ 
 $a_2 \text{ is } x \qquad \begin{bmatrix} a_1/2 \\ a_2' \end{bmatrix} a_2 \stackrel{d}{=} a_1 \text{ comb}$ 
 $a_2 \text{ is } x \qquad \begin{bmatrix} a_1/2 \\ a_2' \end{bmatrix} a_2 \stackrel{d}{=} a_1 \text{ comb}$ 

## 3.3

Exercise 3.1-3.3 2

Exercise 3.1-3.3 3