

1. 不在，无法指導

$$\begin{aligned}
 2. \quad S &\Rightarrow SS * \Rightarrow SSS + * \Rightarrow SSaa + * \\
 &\Rightarrow Saa + * \Rightarrow SSS * aa + * \Rightarrow Sa * aa + * \\
 &\Rightarrow aa * aa + *
 \end{aligned}$$

3. $S \Rightarrow SS * \Rightarrow SS * S * \Rightarrow aS * S * \Rightarrow$
 $aax * S * \Rightarrow aax * SS + * \Rightarrow aax * aS + * \Rightarrow$
 $aax * aa + *$

4.

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graph TD
    S1[S] --> S2[S]
    S1 --> S3[S*]
    S2 --> LParen["("]
    S2 --> RParen[")"]
    S3 --> LParen
    S3 --> RParen
    LParen --> AA1[aa]
    RParen --> AA2[aa]
  
```

$$S \xrightarrow{\quad} aS + S' \xrightarrow{\quad} a + S'$$

$$\begin{array}{c} | \\ aS \\ | \\ aS' \end{array} \qquad \begin{array}{c} | \\ a + S' \\ | \\ \varepsilon \end{array}$$

1. $\text{First}(S) = \{a\}$ $\text{Follow}(S) = \{+, \$\}$

$\text{First}(B) = \{a, \epsilon\}$ $\text{Follow}(B) = \{+, \$\}$

	a	+	\$
S	$S \rightarrow aB$		
B	$B \rightarrow S+B$	$B \rightarrow \epsilon$	$B \rightarrow \epsilon$

2. 是的

3. 能：
 $S \Rightarrow \underline{a}B \Rightarrow aS + B \Rightarrow \underline{aa}B + B$
 $\Rightarrow aaS + B + B \Rightarrow \underline{aaa}B + B + B \Rightarrow aaaS + B + B + B$
 $\Rightarrow \underline{aaaa}B + B + B + B \Rightarrow \underline{aaaa} + B + B + B \Rightarrow$
 $\underline{aaaa} + B + B \Rightarrow \underline{aaaa} + B \Rightarrow aaaa++$

1. 有歧义：我喜欢你喜欢我 有多种结果：

