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$A \to ABd / Aa / a$

$B \to Be / b$

$A \to ABd / Aa / a$

$\alpha_1 = Bd$

$\alpha_2 = a$

$\beta = a$

1) $A \to aA'$

2) $A' \to BdA' | aA' | \varepsilon$

$B \to Be | b$

$a = e$

$\beta = b$

3) $B \to bB'$

4) $B' \to eB' | \varepsilon$

Final

$A \to aA'$

$A' \to BdA' | aA' | \varepsilon$

$B \to bB'$

$B' \to eB' | \varepsilon$

2) $E \to E\ T \mid T$

$T \to T \times F \mid F$

$F \to id$

$E \to E + i \mid T$

$\alpha = + T$

$\beta = T$

1) $E \to TE'$

2) $E' \to + TE' \mid \varepsilon$

$T \to T \times F \mid f$

$\alpha = \times F$

$\beta = F$

3) $T \to FT'$

4) $T' \to \times F T' \mid \varepsilon$

5) $F \to id$

Final

$E \to TE'$

$E' \to TE' \mid \varepsilon$

$T \to FT'$

$T' \to \times FT' \mid \varepsilon$

$F \to id$

3) $S \to S0S \mid S \mid 01$

α 0 S1 S

β = 01

1) $S \to 0 \mid S'$

2 $S' \to 0S1S \mid \varepsilon$

4 $S \to A$

$A \to Ad \mid Ae \mid aB \mid ac$

$B \to bBc \mid f$

1) $S \to A$

$A \to Ad \mid Ae \mid aB \mid ac$

$\alpha_1 = d \quad \alpha_2 = e \quad \beta_1 = aB \quad \beta_2 = ac$

2) $A \to aBA' \mid acA'$

3) $A' \to dA' \mid eA' \mid \varepsilon$

4) $B \to bBc \mid f$

1, 2, 3, 4 are final