```
\langle \{\}, \ \{\}, \ id, \ \{[a]\langle [b]f_n^C\langle X, Y\rangle, Z\rangle \approx_? [b]\langle [a]f_n^C\langle \overline{a}, X\rangle, Z\rangle \}\rangle
                                                                                                                                                        (\approx_? [\mathbf{ab}])
                                                                               \langle \{\},\ \{\},\ id,\ \{\langle [b]f_n^C\langle X,Y\rangle,Z\rangle \approx_? \langle [b]f_n^C\langle \overline{b},(a\,b).X\rangle,(a\,b).Z\rangle,\ a\,\#_?\,\langle [a]f_n^C\langle \overline{a},X\rangle,Z\rangle\}\rangle
                                                                                                                                                      (\approx_? \mathbf{pair})
                                                                               \langle \{\},\ \{\},\ id,\ \{[b]f_n^C\langle X,Y\rangle\approx_? [b]f_n^C\langle \overline{b},(a\,b).X\rangle,\ Z\approx_? (a\,b).Z,\ a\,\#_?\,\langle [a]f_n^C\langle \overline{a},X\rangle,Z\rangle\}\rangle
                                                                                                                                                        (\approx_? [aa])
                                                                                    \langle \{\}, \{\}, id, \{f_n^C \langle X, Y \rangle \approx_? f_n^C \langle \overline{b}, (ab).X \rangle, Z \approx_? (ab).Z, a \#_? \langle [a] f_n^C \langle \overline{a}, X \rangle, Z \rangle \} \rangle
                                                                                                               (\approx_? \mathbf{C})
\langle \{\}, \, \{\}, \, id, \, \{X \approx_? \overline{b}, \, Y \approx_? (a \, b).X, \, Z \approx_? (a \, b).Z, \, a \, \#_? \langle [a] f_n^C \langle \overline{a}, X \rangle, Z \rangle \} \rangle
                                                                                                                                                                                      \{\{\}, \{\}, id, \{X \approx_? (ab).X, Y \approx_? \overline{b}, Z \approx_? (ab).Z, a \#_? \langle [a]f_n^C \langle \overline{a}, X \rangle, Z \rangle\}\}
                                                                                                                                                                                                                                                     (\approx_? \mathbf{inv})
                                                           (\approx_? \mathbf{inst})
                                                                                                                                                                                      \{\{\}, \{\}, id, \{Y \approx_? \overline{b}, Z \approx_? (ab).Z, a\#_? \langle [a]f_n^C \langle \overline{a}, X \rangle, Z \rangle, (ab).X \approx_? X\}\}
              \langle \{\}, \{\}, X/\overline{b}, \{Y \approx_? \overline{a}, Z \approx_? (ab).Z, a \#_? \langle [a] f_n^C \langle \overline{a}, \overline{b} \rangle, Z \rangle \} \rangle
                                                           (\approx_? \mathbf{inst})
                                                                                                                                                                                                                                                   (\approx_? \mathbf{inst})
                \langle \{\}, \{\}, \{X/\overline{b}, Y/\overline{a}\}, \{Z \approx_? (a b).Z, a \#_? \langle [a]f_n^C \langle \overline{a}, \overline{b} \rangle, Z \rangle \} \rangle
                                                                                                                                                                                              \langle \{\}, \ \{\}, \ Y/\overline{b}, \ \{Z \approx_? (a \ b).Z, \ a \#_? \langle [a] f_n^C \langle \overline{a}, X \rangle, Z \rangle, \ (a \ b).X \approx_? X \} \rangle
                                                             (\approx_? inv)
                                                                                                                                                                                                                                                     (\approx_? inv)
                \langle \{\}, \{\}, \{X/\overline{b}, Y/\overline{a}\}, \{a \#_? \langle [a]f_n^C \langle \overline{a}, \overline{b} \rangle, Z \rangle, (a b).Z \approx_? Z \} \rangle
                                                                                                                                                                                              \langle \{\}, \ \{\}, \ Y/\overline{b}, \ \{a \#_? \langle [a]f_n^C \langle \overline{a}, X \rangle, Z \rangle, \ (a \, b).X \approx_? X, \ (a \, b).Z \approx_? Z \} \rangle
                                                          (#? pair)
                                                                                                                                                                                                                                                  (#? pair)
           \{\{\}, \{\}, \{X/\overline{b}, Y/\overline{a}\}, \{a \#_? [a]f_n^C \langle \overline{a}, \overline{b} \rangle, a \#_? Z, (a b).Z \approx_? Z\}\}
                                                                                                                                                                                         \{\{\}, \{\}, Y/\overline{b}, \{a \#_? [a]f_n^C \langle \overline{a}, X \rangle, a \#_? Z, (ab).X \approx_? X, (ab).Z \approx_? Z\}\}
                                                            (\#_? \mathbf{a}[\mathbf{a}])
                                                                                                                                                                                                                                                    (\#_? \mathbf{a}[\mathbf{a}])
                               \{\{\}, \{\}, \{X/\overline{b}, Y/\overline{a}\}, \{a \#_? Z, (a b).Z \approx_? Z\}\}
                                                                                                                                                                                                               \{\{\}, \{\}, Y/\bar{b}, \{a \#_? Z, (a b).X \approx_? X, (a b).Z \approx_? Z\}\}
                                                              (\#_? \mathbf{var})
                                                                                                                                                                                                                                                     (#? var)
                                   \langle \{a\#Z\}, \{\}, \{X/\overline{b}, Y/\overline{a}\}, \{(ab).Z \approx_? Z\} \rangle
                                                                                                                                                                                                                   \langle \{a\#Z\}, \{\}, Y/\overline{b}, \{(ab).X \approx_? X, (ab).Z \approx_? Z\} \rangle
                                                                                 (\top)
                                                                                                                                                                                                                                                                        (\top)
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