Input =

$-1 + k_1\,u_5 + k_2\,k_{10} + u_1\,k_8$

$k_1\,k_6 + k_2\,u_7 + u_1\,k_9$

$k_1\,k_7 + k_2\,k_{11} + u_1\,u_6$

$k_3\,u_5 + k_4\,k_{10} + u_2\,k_8$

$-1 + k_3\,k_6 + k_4\,u_7 + u_2\,k_9$

$k_3\,k_7 + k_4\,k_{11} + u_2\,u_6$

$k_5\,k_8 + u_3\,u_5 + u_4\,k_{10}$

$k_5\,k_9 + u_3\,k_6 + u_4\,u_7$

$-1 + k_5\,u_6 + u_3\,k_7 + u_4\,k_{11}$

$-1 + k_6\,k_3 + k_7\,u_3 + u_5\,k_1$

$k_6\,u_2 + k_7\,k_5 + u_5\,u_1$

$k_6\,k_4 + k_7\,u_4 + u_5\,k_2$

$k_8\,k_1 + k_9\,k_3 + u_6\,u_3$

$-1 + k_8\,u_1 + k_9\,u_2 + u_6\,k_5$

$k_8\,k_2 + k_9\,k_4 + u_6\,u_4$

$k_{10}\,k_1 + k_{11}\,u_3 + u_7\,k_3$

$k_{10}\,u_1 + k_{11}\,k_5 + u_7\,u_2$

$-1 + k_{10}\,k_2 + k_{11}\,u_4 + u_7\,k_4$

$k_1\,k_1^{-1} == 1$

$k_1^{-1}\,k_1 == 1$

$k_2\,k_2^{-1} == 1$

$k_2^{-1}\,k_2 == 1$

$k_3\,k_3^{-1} == 1$

$k_3^{-1}\,k_3 == 1$

$k_4\,k_4^{-1} == 1$

$k_4^{-1}\,k_4 == 1$

$k_5\,k_5^{-1} == 1$

$k_5^{-1}\,k_5 == 1$

$k_6\,k_6^{-1} == 1$

$k_6^{-1}\,k_6 == 1$

$k_7\,k_7^{-1} == 1$

$k_7^{-1}\,k_7 == 1$

$k_8\,k_8^{-1} == 1$

$k_8^{-1}\,k_8 == 1$

$k_9\,k_9^{-1} == 1$

$k_9^{-1}\,k_9 == 1$

$k_{10}\,k_{10}^{-1} == 1$

$k_{10}^{-1}\,k_{10} == 1$

$k_{11}\,k_{11}^{-1} == 1$

$k_{11}^{-1}\,k_{11} == 1$

File Name = thms/WoerdOutput-13805

NCMakeGB Iterations = 2

NCMakeGB on Digested Iterations = 2

SmallBasis Iterations = 1

SmallBasis on Knowns Iterations = 1

Deselect→ {}

UserSelect→ {}

UserUnknowns→ {}

NCShortFormulas→-1

RR→True

RRByCat→False

SB→True

SBByCat→False

DegreeCap→18
DegreeSumCap→26
DegreeCapSB→19
DegreeSumCapSB→27
NCCV→False
THE ORDER IS NOW THE FOLLOWING:
$k_1 < k_1^{-1} < k_2 < k_2^{-1} < k_3 < k_3^{-1} < k_4 < k_4^{-1} < k_5 < k_5^{-1} < k_6 < k_6^{-1} < k_7 < k_7^{-1} < k_8 < k_8^{-1} < k_9 < k_9^{-1} < k_{10} < k_{10}^{-1} < k_{11} < k_{11}^{-1} \ll u_1 \ll u_2 \ll u_3 \ll u_4 \ll u_5 \ll u_6 \ll u_7$

YOUR SESSION HAS DIGESTED
THE FOLLOWING RELATIONS

THE FOLLOWING VARIABLES HAVE BEEN SOLVED FOR:
$\{u_2,\ u_3,\ u_4,\ u_5,\ u_6,\ u_7\}$
The corresponding rules are the following:

$$u_2 \to k_3\, k_1^{-1}\, u_1 - k_3\, k_1^{-1}\, k_8^{-1} - k_4\, k_{10}\, k_8^{-1} + k_3\, k_1^{-1}\, k_2\, k_{10}\, k_8^{-1}$$

$$u_3 \to -1\, k_7^{-1}\, k_6\, k_3 + k_7^{-1}\, k_1^{-1}\, k_2\, k_{10}\, k_1 + k_7^{-1}\, k_1^{-1}\, u_1\, k_8\, k_1$$

$$u_4 \to -1\, k_7^{-1}\, k_6\, k_4 - k_7^{-1}\, k_1^{-1}\, k_2 + k_7^{-1}\, k_1^{-1}\, k_2\, k_{10}\, k_2 + k_7^{-1}\, k_1^{-1}\, u_1\, k_8\, k_2$$

$$u_5 \to k_1^{-1} - k_1^{-1}\, k_2\, k_{10} - k_1^{-1}\, u_1\, k_8$$

$$u_6 \to k_5^{-1} - k_8\, u_1\, k_5^{-1} - k_9\, k_3\, k_1^{-1}\, u_1\, k_5^{-1} + k_9\, k_3\, k_1^{-1}\, k_8^{-1}\, k_5^{-1} + k_9\, k_4\, k_{10}\, k_8^{-1}\, k_5^{-1} - k_9\, k_3\, k_1^{-1}\, k_2\, k_{10}\, k_8^{-1}\, k_5^{-1}$$

$$u_7 \to -1\, k_2^{-1}\, k_1\, k_6 - k_2^{-1}\, u_1\, k_9$$

The expressions with unknown variables {}
and knowns $\{k_1,\ k_{10},\ k_{11},\ k_2,\ k_3,\ k_4,\ k_5,\ k_6,\ k_7,\ k_8,\ k_9,\ k_1^{-1},\ k_{10}^{-1},\ k_{11}^{-1},\ k_2^{-1},\ k_3^{-1},\ k_4^{-1},\ k_5^{-1},\ k_6^{-1},\ k_7^{-1},\ k_8^{-1},\ k_9^{-1}\}$

$$k_1\, k_1^{-1} \to 1$$

$$k_{10}\, k_{10}^{-1} \to 1$$

$$k_{11}\, k_{11}^{-1} \to 1$$

$$k_2\, k_2^{-1} \to 1$$

$$k_3\, k_3^{-1} \to 1$$

$$k_4\, k_4^{-1} \to 1$$

$$k_5\, k_5^{-1} \to 1$$

$$k_6\, k_6^{-1} \to 1$$

$$k_7\, k_7^{-1} \to 1$$

$$k_8\, k_8^{-1} \to 1$$

$$k_9\, k_9^{-1} \to 1$$

$$k_1^{-1}\, k_1 \to 1$$

$$k_{10}^{-1}\, k_{10} \to 1$$

$$k_{11}^{-1}\, k_{11} \to 1$$

$$k_2^{-1}\, k_2 \to 1$$

$$k_3^{-1}\, k_3 \to 1$$

$$k_4^{-1}\, k_4 \to 1$$

$k_5^{-1}\,k_5 \to 1$

$k_6^{-1}\,k_6 \to 1$

$k_7^{-1}\,k_7 \to 1$

$k_8^{-1}\,k_8 \to 1$

$k_9^{-1}\,k_9 \to 1$

USER CREATIONS APPEAR BELOW

SOME RELATIONS WHICH APPEAR BELOW
MAY BE UNDIGESTED

THE FOLLOWING VARIABLES HAVE NOT BEEN SOLVED FOR:
$\{k_1,\, k_{10},\, k_{11},\, k_2,\, k_3,\, k_4,\, k_5,\, k_6,\, k_7,\, k_8,\, k_9,\, u_1,\, k_1^{-1},\, k_{10}^{-1},\, k_{11}^{-1},\, k_2^{-1},\, k_3^{-1},\, k_4^{-1},\, k_5^{-1},\, k_6^{-1},\, k_7^{-1},\, k_8^{-1},\, k_9^{-1}\}$

The expressions with unknown variables $\{u_1\}$
and knowns $\{k_1,\, k_{10},\, k_{11},\, k_2,\, k_3,\, k_4,\, k_5,\, k_6,\, k_7,\, k_8,\, k_9,\, k_1^{-1},\, k_{11}^{-1},\, k_2^{-1},\, k_5^{-1},\, k_7^{-1},\, k_8^{-1},\, k_9^{-1}\}$

$k_4\,k_2^{-1}\,u_1 \;\to\; -1\,k_9^{-1} + k_3\,k_6\,k_9^{-1} + k_3\,k_1^{-1}\,u_1 - k_3\,k_1^{-1}\,k_8^{-1} - k_4\,k_{10}\,k_8^{-1} + k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1} - k_4\,k_2^{-1}\,k_1\,k_6\,k_9^{-1}$

$k_1^{-1}\,u_1\,k_8\,u_1 \;\to\; k_7\,k_5 + k_1^{-1}\,u_1 + k_6\,k_3\,k_1^{-1}\,u_1 - k_6\,k_3\,k_1^{-1}\,k_8^{-1} - k_6\,k_4\,k_{10}\,k_8^{-1} - k_1^{-1}\,k_2\,k_{10}\,u_1 + k_6\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}$

$u_1\,k_9\,k_3\,k_1^{-1}\,u_1 \;\to\; u_1 + k_1\,k_7\,k_5 + k_2\,k_{11}\,k_5 - u_1\,k_8\,u_1 + u_1\,k_9\,k_3\,k_1^{-1}\,k_8^{-1} + u_1\,k_9\,k_4\,k_{10}\,k_8^{-1} - u_1\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}$

$k_{11}^{-1}\,k_2^{-1}\,u_1\,k_9\,k_3 \to k_{11}^{-1}\,k_{10}\,k_1 - k_7^{-1}\,k_6\,k_3 - k_{11}^{-1}\,k_2^{-1}\,k_1\,k_6\,k_3 + k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 + k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1$

$k_{11}^{-1}\,k_2^{-1}\,u_1\,k_9\,k_4 \to -1\,k_{11}^{-1} + k_{11}^{-1}\,k_{10}\,k_2 - k_7^{-1}\,k_6\,k_4 - k_7^{-1}\,k_1^{-1}\,k_2 - k_{11}^{-1}\,k_2^{-1}\,k_1\,k_6\,k_4 + k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_2 + k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_2$

$k_2^{-1}\,u_1\,k_8\,u_1\,k_8 \to -1\,k_{10}\,u_1\,k_8 + k_2^{-1}\,u_1\,k_8 - k_2^{-1}\,k_1\,k_6\,k_3\,k_1^{-1} - k_2^{-1}\,k_1\,k_6\,k_4\,k_{10} + k_2^{-1}\,k_1\,k_7\,k_5\,k_8 + k_2^{-1}\,k_1\,k_6\,k_3\,k_1^{-1}\,k_2\,k_{10} + k_2^{-1}\,k_1\,k_6\,k_3\,k_1^{-1}\,u_1\,k_8$

$k_2^{-1}\,u_1\,k_8\,u_1\,k_9 \;\to\; -1\,k_{10}\,u_1\,k_9 + k_2^{-1}\,u_1\,k_9 + k_2^{-1}\,k_1\,k_7\,k_5\,k_9 + k_2^{-1}\,k_1\,k_6\,k_3\,k_1^{-1}\,u_1\,k_9 - k_2^{-1}\,k_1\,k_6\,k_3\,k_1^{-1}\,k_8^{-1}\,k_9 - k_2^{-1}\,k_1\,k_6\,k_4\,k_{10}\,k_8^{-1}\,k_9 + k_2^{-1}\,k_1\,k_6\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_9$

$k_{11}\,k_5\,k_9\,k_3\,k_1^{-1}\,u_1 \;\to\; k_{11}\,k_5 - k_{10}\,k_1\,k_7\,k_5 - k_{10}\,k_2\,k_{11}\,k_5 - k_{11}\,k_5\,k_8\,u_1 + k_{11}\,k_5\,k_9\,k_3\,k_1^{-1}\,k_8^{-1} + k_{11}\,k_5\,k_9\,k_4\,k_{10}\,k_8^{-1} + k_2^{-1}\,k_1\,k_6\,k_3\,k_7\,k_5 + k_2^{-1}\,k_1\,k_6\,k_4\,k_{11}\,k_5 + k_2^{-1}\,u_1\,k_9\,k_3\,k_7\,k_5 + k_2^{-1}\,u_1\,k_9\,k_4\,k_{11}\,k_5 - k_{11}\,k_5\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}$

$k_{11}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1 \to -1\,k_{10}\,k_1 + k_{11}\,k_7^{-1}\,k_6\,k_3 + k_2^{-1}\,k_1\,k_6\,k_3 + k_2^{-1}\,u_1\,k_9\,k_3 - k_{11}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1$

$k_{11}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_2 \;\to\; 1 - k_{10}\,k_2 + k_{11}\,k_7^{-1}\,k_6\,k_4 + k_{11}\,k_7^{-1}\,k_1^{-1}\,k_2 + k_2^{-1}\,k_1\,k_6\,k_4 + k_2^{-1}\,u_1\,k_9\,k_4 - k_{11}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_2$

$k_7\,k_5\,k_9\,k_3\,k_1^{-1}\,u_1 \to -1\,k_6\,k_3\,k_7\,k_5 - k_6\,k_4\,k_{11}\,k_5 - k_7\,k_5\,k_8\,u_1 - k_1^{-1}\,k_2\,k_{11}\,k_5 + k_7\,k_5\,k_9\,k_3\,k_1^{-1}\,k_8^{-1} + k_7\,k_5\,k_9\,k_4\,k_{10}\,k_8^{-1} + k_1^{-1}\,k_2\,k_{10}\,k_1\,k_7\,k_5 + k_1^{-1}\,k_2\,k_{10}\,k_2\,k_{11}\,k_5 + k_1^{-1}\,u_1\,k_8\,k_1\,k_7\,k_5 + k_1^{-1}\,u_1\,k_8\,k_2\,k_{11}\,k_5 - k_7\,k_5\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}$

$k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_2\,k_{11} \;\to\; k_5\,k_8\,u_1\,k_5^{-1} + k_7^{-1}\,k_6\,k_3\,k_7 + k_7^{-1}\,k_6\,k_4\,k_{11} + k_7^{-1}\,k_1^{-1}\,k_2\,k_{11} + k_5\,k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1} - k_5\,k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1} - k_5\,k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1} - k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1\,k_7 - k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_2\,k_{11} - k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1\,k_7 + k_5\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}$

$k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1\,k_7\,k_{11}^{-1} \to k_8\,u_1\,k_5^{-1}\,k_{11}^{-1} + k_5^{-1}\,k_7^{-1}\,k_6\,k_4 + k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2 + k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_5^{-1}\,k_7^{-1}\,k_6\,k_3\,k_7\,k_{11}^{-1} - k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_2 - k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_2 + k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} - k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1\,k_7\,k_{11}^{-1}$

$$k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1 \;\to\; k_8\,k_1 + k_9\,k_3 - k_5^{-1}\,k_7^{-1}\,k_6\,k_3 + k_8\,u_1\,k_5^{-1}\,k_7^{-1}\,k_6\,k_3 + k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 + k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1 - k_8\,u_1\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 - k_8\,u_1\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1 + k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_7^{-1}\,k_6\,k_3 - k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_6\,k_3 - k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_6\,k_3 + k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_6\,k_3 - k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 + k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 + k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1 + k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 + k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1 - k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,k_2\,k_{10}\,k_1 - k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_7^{-1}\,k_1^{-1}\,u_1\,k_8\,k_1$$

$$k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_{11}^{-1} \;\to\; k_9\,k_4 - k_9\,k_3\,k_1^{-1}\,k_2 + k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_4\,k_{10}\,u_1\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,u_1\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_4\,k_{10}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,u_1\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_4\,k_{10}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_4\,k_{10}\,k_8^{-1}\,k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_9\,k_4\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_3\,k_1^{-1}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} + k_9\,k_4\,k_{10}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1} - k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_9\,k_3\,k_1^{-1}\,k_2\,k_{10}\,k_8^{-1}\,k_5^{-1}\,k_{11}^{-1}$$

The time for preliminaries was 0:00:00
The time for NCMakeGB 1 was 0:00:00
The time for Remove Redundant 1 was 0:00:00
The time for the main NCMakeGB was 0:00:01
The time for Remove Redundant 2 was 0:00:00
The time for reducing unknowns was 0:00:00
The time for clean up basis was 0:00:00
The time for SmallBasis was 0:00:05
The time for CreateCategories was 0:00:08
The time for NCCV was 0:00:00
The time for RegularOutput was 0:00:06
The time for everything so far was 0:00:22