OpenGeoProver Output for conjecture "geothm_zadatak"

Wu's method used

October 2, 2016

1 Invoking the theorem prover

The used proving method is Wu's method.

The input system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= -x_{11}x_5 - x_{10} + x_5 \\
p_{10} &= x_{11}x_4 - x_{11} + x_9 - x_4 \\
p_{11} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{12} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{13} &= x_{14}x_4 + x_{12} - x_4 \\
p_{14} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{15} &= -x_{17}x_5 + x_{17} - x_{16} + x_5 \\
p_{16} &= x_{17}x_4 - x_{17} + x_{15} - x_4 \\
p_{17} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1
\end{aligned}
$$

1.1 Triangulation, step 1

Choosing variable: Trying the variable with index 17.

Variable x_{17} selected: The number of polynomials with this variable, with indexes from 1 to 17, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_{17} from all other polynomials by reducing them with polynomial p_{15} from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= -x_{11}x_5 - x_{10} + x_5 \\
p_{10} &= x_{11}x_4 - x_{11} + x_9 - x_4 \\
p_{11} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{12} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{13} &= x_{14}x_4 + x_{12} - x_4 \\
p_{14} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{15} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{16} &= x_{16}x_4 - x_{16} - x_{15}x_5 + x_{15} + x_5 - x_4 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.2 Triangulation, step 2

Choosing variable: Trying the variable with index 16.

Variable x_{16} selected: The number of polynomials with this variable, with indexes from 1 to 16, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_{16} from all other polynomials by reducing them with polynomial p_{15} from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= -x_{11}x_5 - x_{10} + x_5
\end{aligned}
$$

$$
\begin{aligned}
p_{10} &= x_{11}x_4 - x_{11} + x_9 - x_4 \\
p_{11} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{12} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{13} &= x_{14}x_4 + x_{12} - x_4 \\
p_{14} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.3 Triangulation, step 3

Choosing variable: Trying the variable with index 15.

Variable x_{15} selected: The number of polynomials with this variable, with indexes from 1 to 15, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_{15}. No reduction needed.

The triangular system has not been changed.

1.4 Triangulation, step 4

Choosing variable: Trying the variable with index 14.

Variable x_{14} selected: The number of polynomials with this variable, with indexes from 1 to 14, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_{14} from all other polynomials by reducing them with polynomial p_{12} from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= -x_{11}x_5 - x_{10} + x_5 \\
p_{10} &= x_{11}x_4 - x_{11} + x_9 - x_4 \\
p_{11} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2
\end{aligned}
$$

$$
\begin{aligned}
p_{12} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{13} &= x_{13}x_4 - x_{12}x_5 + x_{12} - x_4 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.5 Triangulation, step 5

Choosing variable: Trying the variable with index 13.

Variable x_{13} selected: The number of polynomials with this variable, with indexes from 1 to 13, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_{13} from all other polynomials by reducing them with polynomial p_{12} from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= -x_{11}x_5 - x_{10} + x_5 \\
p_{10} &= x_{11}x_4 - x_{11} + x_9 - x_4 \\
p_{11} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.6 Triangulation, step 6

Choosing variable: Trying the variable with index 12.

Variable x_{12} selected: The number of polynomials with this variable, with indexes from 1 to 12, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_{12}. No reduction needed.

The triangular system has not been changed.

1.7 Triangulation, step 7

Choosing variable: Trying the variable with index 11.

Variable x_{11} selected: The number of polynomials with this variable, with indexes from 1 to 11, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_{11} from all other polynomials by reducing them with polynomial p_9 from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{10} &= x_{10}x_4 - x_{10} - x_9x_5 + x_5 \\
p_{11} &= -x_{11}x_5 - x_{10} + x_5 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.8 Triangulation, step 8

Choosing variable: Trying the variable with index 10.

Variable x_{10} selected: The number of polynomials with this variable, with indexes from 1 to 10, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_{10} from all other polynomials by reducing them with polynomial p_9 from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_8x_5 - x_7 + x_5 \\
p_7 &= x_8x_4 + x_6 - x_4 \\
p_8 &= -x_7x_1 + x_6x_2 \\
p_9 &= x_9x_5x_1 - x_9x_5 - x_9x_4x_2 + x_9x_2 - x_5x_1 + x_5 + x_4x_2 - x_2 \\
p_{10} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{11} &= -x_{11}x_5 - x_{10} + x_5 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.9 Triangulation, step 9

Choosing variable: Trying the variable with index 9.

Variable x_9 selected: The number of polynomials with this variable, with indexes from 1 to 9, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_9. No reduction needed.

The triangular system has not been changed.

1.10 Triangulation, step 10

Choosing variable: Trying the variable with index 8.

Variable x_8 selected: The number of polynomials with this variable, with indexes from 1 to 8, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_8 from all other polynomials by reducing them with polynomial p_6 from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= -x_7 x_1 + x_6 x_2 \\
p_7 &= x_7 x_4 - x_6 x_5 \\
p_8 &= -x_8 x_5 - x_7 + x_5 \\
p_9 &= x_9 x_5 x_1 - x_9 x_5 - x_9 x_4 x_2 + x_9 x_2 - x_5 x_1 + x_5 + x_4 x_2 - x_2 \\
p_{10} &= -x_{10} x_1 + x_{10} + x_9 x_2 - x_2 \\
p_{11} &= -x_{11} x_5 - x_{10} + x_5 \\
p_{12} &= x_{12} x_5 x_1 - x_{12} x_4 x_2 + x_{12} x_4 - x_{12} x_1 \\
p_{13} &= -x_{13} x_1 + x_{12} x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14} x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15} x_5 x_1 - x_{15} x_5 - x_{15} x_4 x_2 + x_{15} x_4 + x_{15} x_2 - x_{15} x_1 - x_5 x_1 + \\
&\quad x_5 + x_4 x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16} x_1 + x_{16} + x_{15} x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17} x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.11 Triangulation, step 11

Choosing variable: Trying the variable with index 7.

Variable x_7 selected: The number of polynomials with this variable, with indexes from 1 to 7, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_7 from all other polynomials by reducing them with polynomial p_6 from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -x_5 + x_4 \\
p_5 &= x_5 + x_4 - \\
p_6 &= x_6 x_5 x_1 - x_6 x_4 x_2
\end{aligned}
$$

$$
\begin{aligned}
p_7 &= -x_7x_1 + x_6x_2 \\
p_8 &= -x_8x_5 - x_7 + x_5 \\
p_9 &= x_9x_5x_1 - x_9x_5 - x_9x_4x_2 + x_9x_2 - x_5x_1 + x_5 + x_4x_2 - x_2 \\
p_{10} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{11} &= -x_{11}x_5 - x_{10} + x_5 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.12 Triangulation, step 12

Choosing variable: Trying the variable with index 6.

Variable x_6 selected: The number of polynomials with this variable, with indexes from 1 to 6, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_6. No reduction needed.

The triangular system has not been changed.

1.13 Triangulation, step 13

Choosing variable: Trying the variable with index 5.

Variable x_5 selected: The number of polynomials with this variable, with indexes from 1 to 5, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_5 from all other polynomials by reducing them with polynomial p_4 from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= -x_3 + 1 \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_2 - x_1 + 1 \\
p_4 &= -2x_4 + 1 \\
p_5 &= -x_5 + x_4 \\
p_6 &= x_6x_5x_1 - x_6x_4x_2 \\
p_7 &= -x_7x_1 + x_6x_2 \\
p_8 &= -x_8x_5 - x_7 + x_5
\end{aligned}
$$

$$
\begin{aligned}
p_9 &= x_9x_5x_1 - x_9x_5 - x_9x_4x_2 + x_9x_2 - x_5x_1 + x_5 + x_4x_2 - x_2 \\
p_{10} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{11} &= -x_{11}x_5 - x_{10} + x_5 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.14 Triangulation, step 14

Choosing variable: Trying the variable with index 4.

Variable x_4 selected: The number of polynomials with this variable, with indexes from 1 to 4, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_4. No reduction needed.

The triangular system has not been changed.

1.15 Triangulation, step 15

Choosing variable: Trying the variable with index 3.

Variable x_3 selected: The number of polynomials with this variable, with indexes from 1 to 3, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_1. No reduction needed.

The triangular system has not been changed.

1.16 Triangulation, step 16

Choosing variable: Trying the variable with index 2.

Variable x_2 selected: The number of polynomials with this variable, with indexes from 1 to 2, is 2.

Minimal degrees: 2 polynomial(s) with degree 1.

Polynomial with linear degree: Removing variable x_2 from all other polynomials by reducing them with polynomial p_1 from previous step.

Finished a triangulation step, the current system is:

$$
\begin{aligned}
p_1 &= 2x_1 - \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_3 + 1 \\
p_4 &= -2x_4 + 1 \\
p_5 &= -x_5 + x_4 \\
p_6 &= x_6x_5x_1 - x_6x_4x_2 \\
p_7 &= -x_7x_1 + x_6x_2 \\
p_8 &= -x_8x_5 - x_7 + x_5 \\
p_9 &= x_9x_5x_1 - x_9x_5 - x_9x_4x_2 + x_9x_2 - x_5x_1 + x_5 + x_4x_2 - x_2 \\
p_{10} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{11} &= -x_{11}x_5 - x_{10} + x_5 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

1.17 Triangulation, step 17

Choosing variable: Trying the variable with index 1.

Variable x_1 selected: The number of polynomials with this variable, with indexes from 1 to 1, is 1.

Single polynomial with chosen variable: Chosen polynomial is p_1. No reduction needed.

The triangular system has not been changed.

The triangular system is:

$$
\begin{aligned}
p_1 &= 2x_1 - \\
p_2 &= -x_2 + x_1 \\
p_3 &= -x_3 + 1 \\
p_4 &= -2x_4 + 1 \\
p_5 &= -x_5 + x_4 \\
p_6 &= x_6x_5x_1 - x_6x_4x_2 \\
p_7 &= -x_7x_1 + x_6x_2 \\
p_8 &= -x_8x_5 - x_7 + x_5 \\
p_9 &= x_9x_5x_1 - x_9x_5 - x_9x_4x_2 + x_9x_2 - x_5x_1 + x_5 + x_4x_2 - x_2
\end{aligned}
$$

$$
\begin{aligned}
p_{10} &= -x_{10}x_1 + x_{10} + x_9x_2 - x_2 \\
p_{11} &= -x_{11}x_5 - x_{10} + x_5 \\
p_{12} &= x_{12}x_5x_1 - x_{12}x_4x_2 + x_{12}x_4 - x_{12}x_1 \\
p_{13} &= -x_{13}x_1 + x_{12}x_2 - x_{12} + x_1 \\
p_{14} &= -x_{14}x_5 + x_{14} - x_{13} + x_5 \\
p_{15} &= x_{15}x_5x_1 - x_{15}x_5 - x_{15}x_4x_2 + x_{15}x_4 + x_{15}x_2 - x_{15}x_1 - x_5x_1 + \\
&\quad x_5 + x_4x_2 - x_4 - x_2 + x_1 \\
p_{16} &= -x_{16}x_1 + x_{16} + x_{15}x_2 - x_{15} - x_2 + x_1 \\
p_{17} &= -x_{17}x_5 + x_{17} - x_{16} + x_5
\end{aligned}
$$

2 Final Remainder

2.1 Final remainder for conjecture geothm_zadatak

Calculating final remainder of the conclusion:

$$
\begin{aligned}
g &= -x_{17}x_{13}x_9 + x_{17}x_{13}x_6 + x_{17}x_{12}x_{10} - x_{17}x_{12}x_7 - x_{17}x_{10}x_6 + \\
&\quad x_{17}x_9x_7 + x_{16}x_{14}x_9 - x_{16}x_{14}x_6 - x_{16}x_{12}x_{11} + x_{16}x_{12}x_8 + \\
&\quad x_{16}x_{11}x_6 - x_{16}x_9x_8 - x_{15}x_{14}x_{10} + x_{15}x_{14}x_7 + x_{15}x_{13}x_{11} \\
&\quad -x_{15}x_{13}x_8 - x_{15}x_{11}x_7 + x_{15}x_{10}x_8 + x_{14}x_{10}x_6 - x_{14}x_9x_7 \\
&\quad -x_{13}x_{11}x_6 + x_{13}x_9x_8 + x_{12}x_{11}x_7 - x_{12}x_{10}x_8
\end{aligned}
$$

with respect to the triangular system.

1. Pseudo remainder with p_{17} over variable x_{17}:

$$
\begin{aligned}
g &= -x_{16}x_{14}x_9x_5 + x_{16}x_{14}x_9 + x_{16}x_{14}x_6x_5 - x_{16}x_{14}x_6 \\
&\quad -x_{16}x_{13}x_9 + x_{16}x_{13}x_6 + x_{16}x_{12}x_{11}x_5 - x_{16}x_{12}x_{11} + \\
&\quad x_{16}x_{12}x_{10} - x_{16}x_{12}x_8x_5 + x_{16}x_{12}x_8 - x_{16}x_{12}x_7 \\
&\quad -x_{16}x_{11}x_6x_5 + x_{16}x_{11}x_6 - x_{16}x_{10}x_6 + x_{16}x_9x_8x_5 \\
&\quad -x_{16}x_9x_8 + x_{16}x_9x_7 + x_{15}x_{14}x_{10}x_5 - x_{15}x_{14}x_{10} \\
&\quad -x_{15}x_{14}x_7x_5 + x_{15}x_{14}x_7 - x_{15}x_{13}x_{11}x_5 + x_{15}x_{13}x_{11} + \\
&\quad x_{15}x_{13}x_8x_5 - x_{15}x_{13}x_8 + x_{15}x_{11}x_7x_5 - x_{15}x_{11}x_7 \\
&\quad -x_{15}x_{10}x_8x_5 + x_{15}x_{10}x_8 - x_{14}x_{10}x_6x_5 + x_{14}x_{10}x_6 + \\
&\quad x_{14}x_9x_7x_5 - x_{14}x_9x_7 + x_{13}x_{11}x_6x_5 - x_{13}x_{11}x_6 \\
&\quad -x_{13}x_9x_8x_5 + x_{13}x_9x_8 + x_{13}x_9x_5 - x_{13}x_6x_5 \\
&\quad -x_{12}x_{11}x_7x_5 + x_{12}x_{11}x_7 + x_{12}x_{10}x_8x_5 - x_{12}x_{10}x_8 \\
&\quad -x_{12}x_{10}x_5 + x_{12}x_7x_5 + x_{10}x_6x_5 - x_9x_7x_5
\end{aligned}
$$

2. Pseudo remainder with p_{16} over variable x_{16}:

   Polynomial too big for output (text size is 3006 *characters, number of terms is* 132*)*

3. Pseudo remainder with p_{15} over variable x_{15}:

   Polynomial too big for output (number of terms is 480*)*

4. Pseudo remainder with p_{14} over variable x_{14}:

   Polynomial too big for output (number of terms is 646*)*

5. Pseudo remainder with p_{13} over variable x_{13}:

   Polynomial too big for output (number of terms is 638*)*

6. Pseudo remainder with p_{12} over variable x_{12}:

   Polynomial too big for output (number of terms is 414*)*

7. Pseudo remainder with p_{11} over variable x_{11}:

   Polynomial too big for output (number of terms is 357*)*

8. Pseudo remainder with p_{10} over variable x_{10}:

   Polynomial too big for output (number of terms is 546*)*

9. Pseudo remainder with p_9 over variable x_9:

   Polynomial too big for output (number of terms is 398*)*

10. Pseudo remainder with p_8 over variable x_8:

    Polynomial too big for output (text size is 7150 *characters, number of terms is* 199*)*

11. Pseudo remainder with p_7 over variable x_7:

    Polynomial too big for output (text size is 7694 *characters, number of terms is* 199*)*

12. Pseudo remainder with p_6 over variable x_6:

$$g = 0$$

13. Pseudo remainder with p_5 over variable x_5:

$$g = 0$$

14. Pseudo remainder with p_4 over variable x_4:

$$g = 0$$

15. Pseudo remainder with p_3 over variable x_3:

$$g = 0$$

16. Pseudo remainder with p_2 over variable x_2:

$$g = 0$$

17. Pseudo remainder with p_1 over variable x_1:

$$g = 0$$

3 Prover results

Status: Theorem has been proved.

Space Complexity: The biggest polynomial obtained during prover execution contains 646 terms.

Time Complexity: Time spent by the prover is 0.338 seconds.

4 NDG Conditions

NDG Conditions in readable form

- Failed to translate NDG Conditions to readable form