

OpenGeoProver Output for conjecture “geothm_zadatak”

Wu’s method used

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1 Invoking the theorem prover

The used proving method is Wu’s method.

The input system is:

$$\begin{aligned}p_1 &= 2x_4 - x_2 \\p_2 &= 2x_5 - x_3 - x_1 \\p_3 &= 2x_6 - x_1\end{aligned}$$

1.1 Triangulation, step 1

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_2 . No reduction needed.

The triangular system has not been changed.

1.2 Triangulation, step 2

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 1.

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

The triangular system has not been changed.

1.3 Triangulation, step 3

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:

$$\begin{aligned} p_1 &= 2x_6 - x_1 \\ p_2 &= 2x_4 - x_2 \\ p_3 &= 2x_5 - x_3 - x_1 \end{aligned}$$

2 Final Remainder

2.1 Final remainder for conjecture `geothm_zadatak`

Calculating final remainder of the conclusion:

$$g = 4x_6^2 - 8x_6x_5 + 4x_5^2 + 4x_4^2 - x_3^2 - x_2^2$$

with respect to the triangular system.

1. Pseudo remainder with p_3 over variable x_3 :

$$g = 4x_6^2 - 8x_6x_5 + 4x_5x_1 + 4x_4^2 - x_2^2 - x_1^2$$

2. Pseudo remainder with p_2 over variable x_2 :

$$g = 4x_6^2 - 8x_6x_5 + 4x_5x_1 - x_1^2$$

3. 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 7 terms.

Time Complexity: Time spent by the prover is 0.023 seconds.

4 NDG Conditions

NDG Conditions in readable form

- There are no NDG conditions for this theorem