

The function analyzes the stability of a transfer function calculating poles signs and returns the Routh table of polynomial expression, also with parameters. It's ideal for exams. Now with a new algorithm for better intelligible results.

Example

Analyze the transfer function $\frac{3 \cdot (1 + s)}{s^4 + s^3 + 4 \cdot s^2 + 2 \cdot s + k}$
 Enter `routh(fun_denom)`

The screenshot shows the calculator's input screen. The transfer function $\frac{3 \cdot (1 + s)}{s^4 + s^3 + 4 \cdot s^2 + 2 \cdot s + k}$ is entered and labeled as 'tf'. Below it, the same expression is shown in a simplified form: $\frac{3 \cdot (s + 1)}{s^4 + s^3 + 4 \cdot s^2 + 2 \cdot s + k}$. The calculator's status bar at the bottom indicates 'MAIN', 'RAD AUTO', and 'FUNC 1/230'.

The screenshot shows the calculator's output screen. The Routh table for the denominator polynomial is displayed. The table is as follows:

s^4	1	4	k
s^3	1	2	0
s^2	2	k	0
s^1	$-\frac{(k-4)}{2}$	0	0
s^0	k	0	0

Below the table, the command `routh<getdenom<tf>>` is shown. The calculator's status bar at the bottom indicates 'MAIN', 'RAD AUTO', and 'FUNC 2/230'.

You can now analyze k to have stability, store matrix etc.

This program has been already used many times without problems. If you finds any bug first assure you to have selected the English language in the mode and not to have translated the code with any program. If the problem persists please let me know.

For a better and faster answer please enclose some screenshot of the bug: entered inputs, expected outputs, error messages, erroneous code line, mode setting... it will help me very much!

My address is paolosilingardi@interfree.it . Thank you very much for your help!

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