

Sample 1. Find all rational roots: $f(t) = 21t^5 + 43t^4 - 113t^3 - 46t^2 + 49t + 10 = 0$

Exact rational root found:

$2 / 3$

Exact rational root found:

$-5 / 7$

Sample 2. Solve four NxN linear systems having small integer coefficients.

FM_LIN_SOLVE approximate solution for 25 x 25 system in 0.00 seconds.

Determinant =

1.32752958308322536445898219348859375456000000000M+39

X(1) =

9.3083551683215158466781562960258778085200474385667M-1

RM_LIN_SOLVE exact solution for 25 x 25 system in 0.00 seconds.

Determinant =

1327529583083225364458982193488593754560 / 1

X(1) =

61785584278962239966328767305853567729 / 66376479154161268222949109674429687728

FM_LIN_SOLVE approximate solution for 50 x 50 system in 0.02 seconds.

Determinant =

1.1767184343659156222752852783560329851053606155163M+96

X(1) =

3.5303049329519547561629707875935880799507280777575M+0

RM_LIN_SOLVE exact solution for 50 x 50 system in 0.01 seconds.

Determinant =

117671843436591562227528527835603298510536061551634889578843569166835203406558213207461635072576

/

1

X(1) =

25963593084609330776709791442696628826847720293700388633522222281500179017306701559278997169577

/

73544902147869726392205329897252061569085038469771805598677723072927200212909888325466352192036

FM_LIN_SOLVE approximate solution for 75 x 75 system in 0.06 seconds.

Determinant =

8.6458009593884304466497176868141409874368043584159M+158

X(1) =

2.9750132881254852984855831293192972451289680164345M+0

RM_LIN_SOLVE exact solution for 75 x 75 system in 0.05 seconds.

Determinant =

86458009593884304466497176868141409874368043584158866038219932847609525405426856440508224293
3565302035872155986139687147265810578576164567759071518906480556629

/

1

X(1) =

25721372740668649846282483377402421160424829187005510002972382131652046402176164613557871069
30590389338790663688723108863858876450359702135304213902948210749838

/

86458009593884304466497176868141409874368043584158866038219932847609525405426856440508224293
3565302035872155986139687147265810578576164567759071518906480556629

FM_LIN_SOLVE approximate solution for 100 x 100 system in 0.12 seconds.

Determinant =

3.5174880717168312154288707650879389969977895366159M+225

X(1) =

1.4924010285917821877921723787844039624726137239165M+0

RM_LIN_SOLVE exact solution for 100 x 100 system in 0.13 seconds.

Determinant =

35174880717168312154288707650879389969977895366158547505148577242920191340769931706369819276
730223286545704368964604599010306390683318215201585975464681858519281784956518719677989877102
07513890431647108591774875947523578232356

/

1

X(1) =

26247514081447617087109961525952201308903241664234875372811273534387363907406582563402338186
461489580081056230681325067709646965776871627144530436160075768021306183129663332064854752404
81446842890477718390604869011108433027129

/

17587440358584156077144353825439694984988947683079273752574288621460095670384965853184909638
365111643272852184482302299505153195341659107600792987732340929259640892478259359838994938551
03756945215823554295887437973761789116178

Sample 3. Solve four NxN linear systems, this time having non-integer rational coefficients.

FM_LIN_SOLVE approximate solution for 10 x 10 system in 0.00 seconds.

Determinant =

9.7147804132661796673973639165495117524247426918594M+10

X(1) =

7.1366229035259644464643707839561989917846508277142M+0

RM_LIN_SOLVE exact solution for 10 x 10 system in 0.00 seconds.

Determinant =

9488975856813825989769837906769 / 97675659697423500000

X(1) =

67719242430742463099690931373465 / 9488975856813825989769837906769

FM_LIN_SOLVE approximate solution for 20 x 20 system in 0.00 seconds.

Determinant =

1.5162699369855124181273199328179802380674602563495M+32

