Yura Duda / TestNewton

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Function: newton('-4*x - 2*y+x^2+y^2 + 5',[4,5],['x','y'])
@home:~$ F'
[2 * x - 4,2 * (y - 1)]
@home:~$ Hesse
| 2 | | 0 |
| 0 | | 2 |
@home:~$ Iteration
$ = Hesse(0)
| 2 | | 0 |
| 0 | | 2 |
$ = Inverse Hesse(0)
| 0.5 | | 0 |
| 0 | | 0.5 |
$ = x0
[4,5]
$ = Hesse(1)
| 2 | | 0 |
| 0 | | 2 |
$ = Inverse Hesse(1)
| 0.5 | | 0 |
| 0 | | 0.5 |
$ = x1
[2,1]
@home:~$ Result
[2,1]
------------------------------------------------------------
Function: newton('-4*x - sin(2*y) + x^2+y^2 + cos(z) + 5',[4,5],['x','y','z'])
Error: Syntax error
Function: newton('-4*x - sin(2*y) + x^2+y^2 + cos(z) + 5',[4,5,3],['x','y','z'])
@home:~$ F'
[2 * x - 4,2 * y - 2 * cos(2 * y),0 - sin(z)]
@home:~$ Hesse
| 2 | | 0 | | 0 |
| 0 | | 4 * sin(2 * y) + 2 | | 0 |
| 0 | | 0 | | 0 - cos(z) |
@home:~$ Iteration
$ = Hesse(0)
| 2 | | 0 | | 0 |
| 0 | | -0.1760844435574791 | | 0 |
| 0 | | 0 | | 0.9899924966004454 |
$ = Inverse Hesse(0)
| 0.5 | | 0 | | 0 |
| 0 | | -5.679093392901406 | | 0 |
| 0 | | 0 | | 1.0101086659079939 |
$ = x0
[4,5,3]
$ = Hesse(1)
| 2 | | 0 | | 0 |
| 0 | | -1.821422107073856 | | 0 |
| 0 | | 0 | | 0.9999995450474601 |
$ = Inverse Hesse(1)
| 0.5 | | 0 | | 0 |
| 0 | | -0.5490215563522044 | | 0 |
| 0 | | 0 | | 1.0000004549527468 |
$ = x1
[2,71.32126508291358,3.142546543074278]
$ = Hesse(2)
| 2 | | 0 | | 0 |
| 0 | | -1.9787728832386153 | | 0 |
| 0 | | 0 | | 1 |
$ = Inverse Hesse(2)
| 0.5 | | 0 | | 0 |
| 0 | | -0.5053637072099559 | | 0 |
| 0 | | 0 | | 1 |
$ = x2
[2,149.95951533900762,3.141592653300477]
$ = Hesse(3)
| 2 | | 0 | | 0 |
| 0 | | 2.310111303259778 | | 0 |
| 0 | | 0 | | 1 |
$ = Inverse Hesse(3)
| 0.5 | | 0 | | 0 |
| 0 | | 0.432879575364576 | | 0 |
| 0 | | 0 | | 1 |
$ = x3
[2,301.63169759509816,3.141592653589793]
$ = Hesse(4)
| 2 | | 0 | | 0 |
| 0 | | 5.424012799345703 | | 0 |
| 0 | | 0 | | 1 |
$ = Inverse Hesse(4)
| 0.5 | | 0 | | 0 |
| 0 | | 0.18436534665269036 | | 0 |
| 0 | | 0 | | 1 |
$ = x4
[2,41.354448631167145,3.141592653589793]
$ = Hesse(5)
| 2 | | 0 | | 0 |
| 0 | | 4.908819478999927 | | 0 |
| 0 | | 0 | | 1 |
$ = Inverse Hesse(5)
| 0.5 | | 0 | | 0 |
| 0 | | 0.20371496737210018 | | 0 |
| 0 | | 0 | | 1 |
$ = x5
[2,26.296417015577433,3.141592653589793]
$ = Hesse(6)
| 2 | | 0 | | 0 |
| 0 | | -0.898041986575516 | | 0 |
| 0 | | 0 | | 1 |
$ = Inverse Hesse(6)
| 0.5 | | 0 | | 0 |
| 0 | | -1.113533682109094 | | 0 |
| 0 | | 0 | | 1 |
$ = x6
[2,15.30280129493301,3.141592653589793]
$ = Hesse(7)
| 2 | | 0 | | 0 |
| 0 | | 5.970118620533837 | | 0 |
| 0 | | 0 | | 1 |
$ = Inverse Hesse(7)
```

0.5		0		0
0		0.16750085945705745		0
0		0		1
$ = x7
[2,47.84813379956809,3.141592653589793]
$ = Hesse(8)
2		0		0
0		5.10259733668265		0
0		0		1
$ = Inverse Hesse(8)
0.5		0		0
0		0.1959786230457545		0
0		0		1
$ = x8
[2,31.85979815282604,3.141592653589793]
$ = Hesse(9)
2		0		0
0		5.998091684031406		0
0		0		1
$ = Inverse Hesse(9)
0.5		0		0
0		0.16671969230851857		0
0		0		1
$ = x9
[2,19.619508746949684,3.141592653589793]
$ = Hesse(10)
2		0		0
0		5.455755548169658		0
0		0		1
$ = Inverse Hesse(10)
0.5		0		0
0		0.18329266976330863		0
0		0		1
$ = x10
[2,13.087890353815038,3.141592653589793]
$ = Hesse(11)
2		0		0
0		-1.784928232708578		0
0		0		1
$ = Inverse Hesse(11)
0.5		0		0
0		-0.5602466147798717		0
0		0		1
$ = x11
[2,8.474672778636434,3.141592653589793]
$ = Hesse(12)
2		0		0
0		-1.4357797642420644		0
0		0		1
$ = Inverse Hesse(12)
0.5		0		0
0		-0.6964856483597895		0
0		0		1
$ = x12
[2,18.332953066709955,3.141592653589793]
$ = Hesse(13)
2		0		0
0		-1.9872295273773548		0
0		0		1
$ = Inverse Hesse(13)
0.5		0		0
0		-0.5032131347805352		0
0		0		1
$ = x13
[2,43.15693451260296,3.141592653589793]
$ = Hesse(14)
2		0		0
0		-0.10958226440203633		0
0		0		1
$ = Inverse Hesse(14)
0.5		0		0
0		-9.125564300544033		0
0		0		1
$ = x14
[2,86.67156408756617,3.141592653589793]
$ = Hesse(15)
2		0		0
0		3.092233677922964		0
0		0		1
$ = Inverse Hesse(15)
0.5		0		0
0		0.32339082493652105		0
0		0		1
$ = x15
[2,1684.0319477452597,3.141592653589793]
$ = Hesse(16)
2		0		0
0		1.0384649903471292		0
0		0		1
$ = Inverse Hesse(16)
0.5		0		0
0		0.9629597620481443		0
0		0		1
$ = x16
[2,595.4531884434837,3.141592653589793]
$ = Hesse(17)
2		0		0
0		-0.19793705279277418		0
0		0		1
$ = Inverse Hesse(17)
0.5		0		0
0		-5.052111193384939		0
0		0		1
$ = x17
[2,-553.2111804499291,3.141592653589793]
$ = Hesse(18)
2		0		0
0		0.5634056729550927		0
0		0		1
$ = Inverse Hesse(18)
0.5		0		0
0		1.774920005251184		0
0		0		1

$ = x18
[2,-6151.422093452587,3.141592653589793]
$ = Hesse(19)
2		0		0
0		-1.8719463317436134		0
0		0		1
$ = Inverse Hesse(19)
0.5		0		0
0		-0.5342033492320027		0
0		0		1
$ = x19
[2,15688.455171461836,3.141592653589793]
$ = Hesse(20)
2		0		0
0		4.43393413111591		0
0		0		1
$ = Inverse Hesse(20)
0.5		0		0
0		0.22553334587952598		0
0		0		1
$ = x20
[2,32449.837593046985,3.141592653589793]
$ = Hesse(21)
2		0		0
0		4.416332326371041		0
0		0		1
$ = Inverse Hesse(21)
0.5		0		0
0		0.2264322351895364		0
0		0		1
$ = x21
[2,17813.154653248726,3.141592653589793]
$ = Hesse(22)
2		0		0
0		3.7074120039785834		0
0		0		1
$ = Inverse Hesse(22)
0.5		0		0
0		0.26972993530982176		0
0		0		1
$ = x22
[2,9746.570702787682,3.141592653589793]
$ = Hesse(23)
2		0		0
0		-1.0520575374175558		0
0		0		1
$ = Inverse Hesse(23)
0.5		0		0
0		-0.9505183551601756		0
0		0		1
$ = x23
[2,4488.199087573698,3.141592653589793]
$ = Hesse(24)
2		0		0
0		0.13560620130872603		0
0		0		1
$ = Inverse Hesse(24)
0.5		0		0
0		7.374294024528889		0
0		0		1
$ = x24
[2,13021.659111246394,3.141592653589793]
$ = Hesse(25)
2		0		0
0		5.650703091805261		0
0		0		1
$ = Inverse Hesse(25)
0.5		0		0
0		0.17696912822232969		0
0		0		1
$ = x25
[2,-179016.37827528716,3.141592653589793]
$ = Hesse(26)
2		0		0
0		-0.782375205323318		0
0		0		1
$ = Inverse Hesse(26)
0.5		0		0
0		-1.2781591149565485		0
0		0		1
$ = x26
[2,-115655.77812253608,3.141592653589793]
$ = Hesse(27)
2		0		0
0		0.5864357386429293		0
0		0		1
$ = Inverse Hesse(27)
0.5		0		0
0		1.7052166744034045		0
0		0		1
$ = x27
[2,-411306.9155827348,3.141592653589793]
$ = Hesse(28)
2		0		0
0		5.625489863908832		0
0		0		1
$ = Inverse Hesse(28)
0.5		0		0
0		0.17776229700735022		0
0		0		1
$ = x28
[2,991431.0962929598,3.141592653589793]
$ = Hesse(29)
2		0		0
0		1.889914961506056		0
0		0		1
$ = Inverse Hesse(29)
0.5		0		0
0		0.5291243364744354		0
0		0		1
$ = x29
[2,638952.8080879926,3.141592653589793]
$ = Hesse(30)

2		0		0
0		3.6887569938289406		0
0		0		1
$ = Inverse Hesse(30)
0.5		0		0
0		0.27109403023103373		0
0		0		1
$ = x30
[2,-37217.0953002522,3.141592653589793]
$ = Hesse(31)
2		0		0
0		5.341134830417986		0
0		0		1
$ = Inverse Hesse(31)
0.5		0		0
0		0.1872261292309938		0
0		0		1
$ = x31
[2,-17038.922081036664,3.141592653589793]
$ = Hesse(32)
2		0		0
0		5.596091722507912		0
0		0		1
$ = Inverse Hesse(32)
0.5		0		0
0		0.17869614180516788		0
0		0		1
$ = x32
[2,-10658.86510706737,3.141592653589793]
$ = Hesse(33)
2		0		0
0		-1.8331587661161493		0
0		0		1
$ = Inverse Hesse(33)
0.5		0		0
0		-0.5455064877542853		0
0		0		1
$ = x33
[2,-6849.312463121978,3.141592653589793]
$ = Hesse(34)
2		0		0
0		3.615423981392776		0
0		0		1
$ = Inverse Hesse(34)
0.5		0		0
0		0.27659273300908077		0
0		0		1
$ = x34
[2,-14322.313043733804,3.141592653589793]
$ = Hesse(35)
2		0		0
0		5.4195780338548625		0
0		0		1
$ = Inverse Hesse(35)
0.5		0		0
0		0.18451621025718776		0
0		0		1
$ = x35
[2,-6398.911561628083,3.141592653589793]
$ = Hesse(36)
2		0		0
0		-0.6836825229324508		0
0		0		1
$ = Inverse Hesse(36)
0.5		0		0
0		-1.462667197796428		0
0		0		1
$ = x36
[2,-4037.314284673522,3.141592653589793]
$ = Hesse(37)
2		0		0
0		-1.8386751849726766		0
0		0		1
$ = Inverse Hesse(37)
0.5		0		0
0		-0.5438698516045184		0
0		0		1
$ = x37
[2,-15849.977848228344,3.141592653589793]
$ = Hesse(38)
2		0		0
0		-1.5218866335639132		0
0		0		1
$ = Inverse Hesse(38)
0.5		0		0
0		-0.6570791660468341		0
0		0		1
$ = x38
[2,-33090.93384832921,3.141592653589793]
$ = Hesse(39)
2		0		0
0		4.822175529710853		0
0		0		1
$ = Inverse Hesse(39)
0.5		0		0
0		0.20737527985837587		0
0		0		1
$ = x39
[2,-76578.28332274113,3.141592653589793]
$ = Hesse(40)
2		0		0
0		4.052589655698237		0
0		0		1
$ = Inverse Hesse(40)
0.5		0		0
0		0.24675579936743086		0
0		0		1
$ = x40
[2,-44817.691372203095,3.141592653589793]
$ = Hesse(41)
2		0		0
0		-0.6402336550506957		0
0		0		1

$ = Inverse Hesse(41)
0.5		0		0
0		-1.5619297612850684		0
0		0		1
$ = x41
[2,-22699.217270254383,3.141592653589793]
$ = Hesse(42)
2		0		0
0		5.957790676260617		0
0		0		1
$ = Inverse Hesse(42)
0.5		0		0
0		0.1678474545916148		0
0		0		1
$ = x42
[2,-93606.03660695342,3.141592653589793]
$ = Hesse(43)
2		0		0
0		1.2139445934042496		0
0		0		1
$ = Inverse Hesse(43)
0.5		0		0
0		0.8237608251919575		0
0		0		1
$ = x43
[2,-62183.01528824499,3.141592653589793]
$ = Hesse(44)
2		0		0
0		5.673066439091029		0
0		0		1
$ = Inverse Hesse(44)
0.5		0		0
0		0.17627151219477447		0
0		0		1
$ = x44
[2,40263.233288586984,3.141592653589793]
$ = Hesse(45)
2		0		0
0		1.32333143018999		0
0		0		1
$ = Inverse Hesse(45)
0.5		0		0
0		0.7556685930571682		0
0		0		1
$ = x45
[2,26068.850847202608,3.141592653589793]
$ = Hesse(46)
2		0		0
0		4.100627590775822		0
0		0		1
$ = Inverse Hesse(46)
0.5		0		0
0		0.24386511036736305		0
0		0		1
$ = x46
[2,-13328.483282589725,3.141592653589793]
$ = Hesse(47)
2		0		0
0		1.5419478396196897		0
0		0		1
$ = Inverse Hesse(47)
0.5		0		0
0		0.6485303680873166		0
0		0		1
$ = x47
[2,-6828.194250176748,3.141592653589793]
$ = Hesse(48)
2		0		0
0		5.998693982022514		0
0		0		1
$ = Inverse Hesse(48)
0.5		0		0
0		0.16670295284221864		0
0		0		1
$ = x48
[2,2027.0998823608643,3.141592653589793]
$ = Hesse(49)
2		0		0
0		4.735254719851051		0
0		0		1
$ = Inverse Hesse(49)
0.5		0		0
0		0.21118188126349732		0
0		0		1
$ = x49
[2,1351.2613293420873,3.141592653589793]
$ = Hesse(50)
2		0		0
0		0.7423698242449492		0
0		0		1
$ = Inverse Hesse(50)
0.5		0		0
0		1.3470375106060941		0
0		0		1
$ = x50
[2,780.8456906589877,3.141592653589793]
$ = Hesse(51)
2		0		0
0		4.775720491262324		0
0		0		1
$ = Inverse Hesse(51)
0.5		0		0
0		0.20939248890918213		0
0		0		1
$ = x51
[2,-1325.368633324023,3.141592653589793]
$ = Hesse(52)
2		0		0
0		-0.46771126124266527		0
0		0		1
$ = Inverse Hesse(52)
| 0.5 | | 0 | | 0 |
| 0 | | -2.1380712479385107 | | 0 |

| 0 | | 0 | | 1 |
$ = x52
[2,-770.022616697026,3.141592653589793]
$ = Hesse(53)
2		0		0
0		-1.9067630134101088		0
0		0		1
$ = Inverse Hesse(53)
0.5		0		0
0		-0.5244490232750906		0
0		0		1
$ = x53
[2,-4066.1144592956775,3.141592653589793]
$ = Hesse(54)
2		0		0
0		5.902703993635274		0
0		0		1
$ = Inverse Hesse(54)
0.5		0		0
0		0.16941388236277355		0
0		0		1
$ = x54
[2,-8330.828825391322,3.141592653589793]
$ = Hesse(55)
2		0		0
0		-1.9864812701602004		0
0		0		1
$ = Inverse Hesse(55)
0.5		0		0
0		-0.5034026824322158		0
0		0		1
$ = x55
[2,-5508.038439171172,3.141592653589793]
$ = Hesse(56)
2		0		0
0		0.32984893664202897		0
0		0		1
$ = Inverse Hesse(56)
0.5		0		0
0		3.0316908406021557		0
0		0		1
$ = x56
[2,-11053.478384713517,3.141592653589793]
$ = Hesse(57)
2		0		0
0		4.194221703109953		0
0		0		1
$ = Inverse Hesse(57)
0.5		0		0
0		0.23842325722994442		0
0		0		1
$ = x57
[2,55962.470416955235,3.141592653589793]
$ = Hesse(58)
2		0		0
0		2.4853699266365465		0
0		0		1
$ = Inverse Hesse(58)
0.5		0		0
0		0.40235459087303793		0
0		0		1
$ = x58
[2,29276.562759926546,3.141592653589793]
$ = Hesse(59)
2		0		0
0		5.5429138056073635		0
0		0		1
$ = Inverse Hesse(59)
0.5		0		0
0		0.18041052685834166		0
0		0		1
$ = x59
[2,5718.242659992764,3.141592653589793]
$ = Hesse(60)
2		0		0
0		2.75732065307178		0
0		0		1
$ = Inverse Hesse(60)
0.5		0		0
0		0.3626709134775292		0
0		0		1
$ = x60
[2,3655.1478124883706,3.141592653589793]
$ = Hesse(61)
2		0		0
0		5.508246288865752		0
0		0		1
$ = Inverse Hesse(61)
0.5		0		0
0		0.18154598533863273		0
0		0		1
$ = x61
[2,1003.2039974671638,3.141592653589793]
$ = Hesse(62)
2		0		0
0		5.527247952146026		0
0		0		1
$ = Inverse Hesse(62)
0.5		0		0
0		0.18092186358524714		0
0		0		1
$ = x62
[2,638.7742596500107,3.141592653589793]
$ = Hesse(63)
2		0		0
0		-1.8105720882562801		0
0		0		1
$ = Inverse Hesse(63)
0.5		0		0
0		-0.5523116182372373		0
0		0		1
$ = x63
[2,407.4671548101536,3.141592653589793]

$ = Hesse(64)
2		0		0
0		3.8892309298628467		0
0		0		1
$ = Inverse Hesse(64)
0.5		0		0
0		0.2571202425450383		0
0		0		1
$ = x64
[2,857.9007479823733,3.141592653589793]
$ = Hesse(65)
2		0		0
0		-1.8435681728726143		0
0		0		1
$ = Inverse Hesse(65)
0.5		0		0
0		-0.5424263744159882		0
0		0		1
$ = x65
[2,417.18672008543,3.141592653589793]
$ = Hesse(66)
2		0		0
0		-1.989234218210557		0
0		0		1
$ = Inverse Hesse(66)
0.5		0		0
0		-0.5027060116126314		0
0		0		1
$ = x66
[2,869.4724592073374,3.141592653589793]
$ = Hesse(67)
2		0		0
0		1.9430835868136322		0
0		0		1
$ = Inverse Hesse(67)
0.5		0		0
0		0.5146458993253353		0
0		0		1
$ = x67
[2,1743.5768079505876,3.141592653589793]
$ = Hesse(68)
2		0		0
0		3.7194429187296683		0
0		0		1
$ = Inverse Hesse(68)
0.5		0		0
0		0.26885746652123327		0
0		0		1
$ = x68
[2,-50.04331319609901,3.141592653589793]
$ = Hesse(69)
2		0		0
0		-1.8701065911700234		0
0		0		1
$ = Inverse Hesse(69)
0.5		0		0
0		-0.5347288784081311		0
0		0		1
$ = x69
[2,-22.64877615637919,3.141592653589793]
$ = Hesse(70)
2		0		0
0		1.8630547498966707		0
0		0		1
$ = Inverse Hesse(70)
0.5		0		0
0		0.5367528786019102		0
0		0		1
$ = x70
[2,-47.14101130597834,3.141592653589793]
$ = Hesse(71)
2		0		0
0		3.366906962619459		0
0		0		1
$ = Inverse Hesse(71)
0.5		0		0
0		0.2970085039777869		0
0		0		1
$ = x71
[2,4.538012162618337,3.141592653589793]
$ = Hesse(72)
2		0		0
0		4.169947903490973		0
0		0		1
$ = Inverse Hesse(72)
0.5		0		0
0		0.23981114947810875		0
0		0		1
$ = x72
[2,1.284098952545968,3.141592653589793]
$ = Hesse(73)
2		0		0
0		4.024223968538724		0
0		0		1
$ = Inverse Hesse(73)
0.5		0		0
0		0.24849511553481451		0
0		0		1
$ = x73
[2,0.2653029320012772,3.141592653589793]
$ = Hesse(74)
2		0		0
0		5.607704496357546		0
0		0		1
$ = Inverse Hesse(74)
0.5		0		0
0		0.17832608702001765		0
0		0		1
$ = x74
[2,0.5621043527928467,3.141592653589793]
@home:~$ Result
[2,0.5156632424113176,3.141592653589793]

Function: jf("-4*x - sin(2*y) + x^2+y^2 + cos(z) + 5',{x:2,y:0.5156632424113176,z : 3.141592653589793})
Error: Syntax error
Function: jf('-4*x - sin(2*y) + x^2+y^2 + cos(z) + 5',{x:2,y:0.5156632424113176,z : 3.141592653589793})
@home:~$ F(x,y,..)
-0.5920725545631971
