

*Essais de formules pour voir des entiers parmi les réels (Denise Vella-Chemla, décembre 2020)*

The screenshot shows two Emacs windows. The left window displays a list of numbers, some grouped under 'etude de 98' and 'etude de 100'. The right window shows a Python script that iterates over a range of numbers, calculating a value 't' based on whether the number is even or odd, and then printing the result.

```

emacs25@vellach
File Edit Options Buffers Tools Help
41 --> 36.66060555964672
43 --> 30.983866769659336
45 --> 24.0
47 --> 13.856406460551018
etude de 98
3 --> 94.95261976375376
5 --> 92.8654941299512
7 --> 90.7303697771004
9 --> 88.54377448471462
11 --> 86.30179604156567
13 --> 84.0
15 --> 81.6333265278342
17 --> 79.19595949289332
19 --> 76.68115805072325
21 --> 74.08103670980854
23 --> 71.386273190299
25 --> 68.58571279792899
27 --> 65.66582063752801
29 --> 62.609903369994115
31 --> 59.39696961966999
33 --> 56.0
35 --> 52.38320341483518
37 --> 48.49742261192856
39 --> 44.27188724235731
41 --> 39.59797974644666
43 --> 34.292856398964496
45 --> 28.0
47 --> 19.79898987322333
49 --> 0.0
etude de 100
3 --> 96.95359714832658
5 --> 94.86832980505137
7 --> 92.73618495495704
-:--- montrevoir 92% L603 (Fundame

```

```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
print("etude de "+str(n))
if (n%2 == 0):
moitie = int(n/2)+1
else:
moitie = int(n/2)
for x in range(3,moitie,2):
t = (((float(n)-float(x))**2)-(float(x)**2))*0.5
print(" "+str(x)+" --> "+str(t))

```

The screenshot shows two Emacs windows. The left window displays a list of numbers, some grouped under 'etude de 98' and 'etude de 100'. The right window shows a Python script that iterates over a range of numbers, calculating a value 't' based on whether the number is even or odd, and then printing the result.

```

emacs25@vellach
File Edit Options Buffers Tools Help
43 --> 21.908902300206645
45 --> 16.97056274847714
47 --> 9.797958971132712
etude de 98
3 --> 67.14164132637808
5 --> 65.66582063752801
7 --> 64.15605972938177
9 --> 62.609903369994115
11 --> 61.02458520956943
13 --> 59.39696961966999
15 --> 57.723478758647246
17 --> 56.0
19 --> 54.22176684690383
21 --> 52.38320341483518
23 --> 50.47771785649585
25 --> 48.49742261192856
27 --> 46.4327470649756
29 --> 44.27188724235731
31 --> 42.0
33 --> 39.59797974644666
35 --> 37.04051835490427
37 --> 34.292856398964496
39 --> 31.304951684997057
41 --> 28.0
43 --> 24.24871130596428
45 --> 19.79898987322333
47 --> 14.0
49 --> 0.0
etude de 100
3 --> 68.55654600401044
5 --> 67.08203932499369
7 --> 65.57438524302
9 --> 64.03124237432849
-:--- montrevoir2 92% L602 (Fundament

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emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
print("etude de "+str(n))
if (n%2 == 0):
moitie = int(n/2)+1
else:
moitie = int(n/2)
for x in range(3,moitie,2):
t = (((float(n)-float(x))**2)/2.0)-((float(x)**2)/2.0))*0.5
print(" "+str(x)+" --> "+str(t))

```

```

emacs25@vellach
File Edit Options Buffers Tools Help
35 --> 24.979991993593593
37 --> 22.978250586152114
39 --> 20.784609690826528
41 --> 18.33030277982336
43 --> 15.491933384829668
45 --> 12.0
47 --> 6.928203230275509
etude de 98
3 --> 47.47630988187688
5 --> 46.4327470649756
7 --> 45.36518488885502
9 --> 44.27188724235731
11 --> 43.15089802078283
13 --> 42.0
15 --> 40.8166632639171
17 --> 39.59797974644666
19 --> 38.34057902536163
21 --> 37.04051835490427
23 --> 35.6931365951495
25 --> 34.292856398964496
27 --> 32.83291031876401
29 --> 31.304951684997057
31 --> 29.698484809834994
33 --> 28.0
35 --> 26.19160170741759
37 --> 24.24871130596428
39 --> 22.135943621178654
41 --> 19.79898987322333
43 --> 17.146428199482248
45 --> 14.0
47 --> 9.899494936611665
49 --> 0.0
etude de 100
--:--- montrevoir2 92% L606 (Fundament

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
    print("etude de "+str(n))
    if (n%2 == 0):
        moitie = int(n/2)+1
    else:
        moitie = int(n/2)
    for x in range(3,moitie,2):
        t = (((float(n)-float(x))**2)/4.0)-((float(x)**2)/4)**0.5
        print(" "+str(x)+" --> "+str(t))

```

```

emacs25@vellach
File Edit Options Buffers Tools Help
43 --> 11.710800875382397
45 --> 9.071147352221454
47 --> 5.2372293656638185
etude de 98
3 --> 35.888716889852724
5 --> 35.09985754956849
7 --> 34.292856398964496
9 --> 33.46640106136302
11 --> 32.61901286060018
13 --> 31.74901573277509
15 --> 30.854497241083024
17 --> 29.93325909419153
19 --> 28.982753492378876
21 --> 28.0
23 --> 26.981475126464083
25 --> 25.92296279363144
27 --> 24.819347291981714
29 --> 23.664319132398465
31 --> 22.44994432064365
33 --> 21.166010488516726
35 --> 19.79898987322333
37 --> 18.33030277982336
39 --> 16.73320053068151
41 --> 14.966629547095767
43 --> 12.96148139681572
45 --> 10.583005240258363
47 --> 7.483314773547883
49 --> 0.0
etude de 100
3 --> 36.645015252516174
5 --> 35.85685828003181
7 --> 35.050983275386564
9 --> 34.22613871631697
--:--- montrevoir2 92% L621 (Fundament

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
    print("etude de "+str(n))
    if (n%2 == 0):
        moitie = int(n/2)+1
    else:
        moitie = int(n/2)
    for x in range(3,moitie,2):
        t = (((float(n)-float(x))**2)/7.0)-((float(x)**2)/7)**0.5
        print(" "+str(x)+" --> "+str(t))

```

```

emacs25@vellach                               emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help           File Edit Options Buffers Tools Python Help
47 --> 11.313708498984761
etude de 98
3 --> 77.52848938723537
5 --> 75.82435844326896
7 --> 74.08103670980854
9 --> 72.29568912920512
11 --> 70.46512139586032
13 --> 68.58571279792899
15 --> 66.6533199973327
17 --> 64.66323014923809
19 --> 62.609903369994115
21 --> 60.486913185140025
23 --> 58.286647985051715
25 --> 56.0
27 --> 53.615918034354934
29 --> 51.120772033815506
31 --> 48.49742261192856
33 --> 45.723808531952656
35 --> 42.77070648625451
37 --> 39.59797974644666
39 --> 36.14784456460256
41 --> 32.331615074619044
43 --> 28.0
45 --> 22.86190426597633
47 --> 16.16580753730952
49 --> 0.0
etude de 100
3 --> 79.16228058025278
5 --> 77.45966692414834
7 --> 75.7187794400365
9 --> 73.93691004272945
11 --> 72.11102550927978
13 --> 70.23769168568492
-:--- montrevoir2 93% L614 (Fundament

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emacs25@vellach                               emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help           File Edit Options Buffers Tools Python Help
41 --> 19.595917942265427
43 --> 16.561573424216498
45 --> 12.82853961179637
47 --> 7.406560798180414
etude de 98
3 --> 50.75431016179808
5 --> 49.63869458396343
7 --> 48.49742261192856
9 --> 47.32863826479693
11 --> 46.130250378683186
13 --> 44.8998886412873
15 --> 43.634848458542855
17 --> 42.33202097703345
19 --> 40.98780306383839
21 --> 39.59797974644666
23 --> 38.157568056677825
25 --> 36.66060555964672
27 --> 35.09985754956849
29 --> 33.46640106136302
31 --> 31.74901573277509
33 --> 29.93325909419153
35 --> 28.0
37 --> 25.92296279363144
39 --> 23.664319132398465
41 --> 21.166010488516726
43 --> 18.33030277982336
45 --> 14.966629547095765
47 --> 10.583005244258363
49 --> 0.0
etude de 100
3 --> 51.823877563477296
5 --> 50.709255283710995
7 --> 49.56957592256421
-:--- montrevoir2 92% L626 (Fundament

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help
45 --> (2.8547814789590386e-15+46.620813134800876j)
47 --> (3.3680571833758323e-15+55.004548016959745j)
etude de 98
3 --> 116.23468222114316
5 --> 113.57156902081668
7 --> 110.79034807892845
9 --> 107.8818852442342
11 --> 104.83559080317195
13 --> 101.63907237401423
15 --> 98.2776727388133
17 --> 94.73384240834997
19 --> 90.90626724809024
21 --> 87.00862461302371
23 --> 82.76775147996995
25 --> 78.220845123599
27 --> 73.31098510762254
29 --> 67.95955018869715
31 --> 62.05240031658759
33 --> 55.412095313659016
35 --> 47.73363832613247
37 --> 38.399220662013626
39 --> 25.06125612377552
41 --> (7.97197134625141e-16+13.019217217252416j)
43 --> (1.94551556228141e-15+31.772631319266118j)
45 --> (2.6418758083061735e-15+43.14510616686461j)
47 --> (3.1967153831724144e-15+52.20632406663035j)
49 --> (3.674705905713824e-15+60.012501698813026j)
etude de 100
3 --> 118.68656793694113
5 --> 116.02801966012406
7 --> 113.25414465929219
9 --> 110.35624684561415
11 --> 107.32428034629497
----- montrevoir2 92% L620 (Fundamental)

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
    print("etude de "+str(n))
    if (n%2 == 0):
        moitie = int(n/2)+1
    else:
        moitie = int(n/2)
    for x in range(3,moitie,2):
        t = (((float(n)-float(x))**2)/0.6666666)-((float(x)**2)/0.3333333)**0.5
    print(" "+str(x)+" --> "+str(t))

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help
45 --> 33.94112549695428
47 --> 19.595917942265423
etude de 98
3 --> 134.28328265275616
5 --> 131.33164127505603
7 --> 128.31211945876353
9 --> 125.21980673998823
11 --> 122.04917041913886
13 --> 118.79393933933998
15 --> 115.44695751729449
17 --> 112.0
19 --> 108.44353369380767
21 --> 104.76640682967036
23 --> 100.9554357129917
25 --> 96.99484522385713
27 --> 92.8654941299512
29 --> 88.54377448471462
31 --> 84.0
33 --> 79.19595949289332
35 --> 74.081036709800854
37 --> 68.58571279792899
39 --> 62.609903369994115
41 --> 56.0
43 --> 48.49742261192856
45 --> 39.59797974644666
47 --> 28.0
49 --> 0.0
etude de 100
3 --> 137.1130920802089
5 --> 134.16407864998737
7 --> 131.14877048604
9 --> 128.06248474865697
11 --> 124.8999596796796
----- montrevoir2 92% L625 (Fundamental)

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
    print("etude de "+str(n))
    if (n%2 == 0):
        moitie = int(n/2)+1
    else:
        moitie = int(n/2)
    for x in range(3,moitie,2):
        t = (((float(n)-float(x))**2)/0.5)-((float(x)**2)/0.5)**0.5
    print(" "+str(x)+" --> "+str(t))

```

```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help
45 --> 48.0
47 --> 27.712812921102035
etude de 98
3 --> 189.90523952750752
5 --> 185.7309882599024
7 --> 181.4607395542008
9 --> 177.08754896942924
11 --> 172.60359208313133
13 --> 168.0
15 --> 163.2666530556684
17 --> 158.39191898578665
19 --> 153.3623161014465
21 --> 148.1620734196171
23 --> 142.772546380598
25 --> 137.17142559585798
27 --> 131.33164127505603
29 --> 125.21980673998823
31 --> 118.79393933933998
33 --> 112.0
35 --> 104.76640682967036
37 --> 96.99484522385713
39 --> 88.54377448471462
41 --> 79.19595949289332
43 --> 68.58571279792899
45 --> 56.0
47 --> 39.59797974644666
49 --> 0.0
etude de 100
3 --> 193.90719429665316
5 --> 189.73665961010275
7 --> 185.47236990991408
9 --> 181.10770276274835
11 --> 176.63521732655693
13 --> 172.04650534085255
15 --> 167.33200530681512
----- montrevoir2 92% L614 (Fundamental)

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```

emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Python Help
em = 0.577215664
for n in range(6,102,2):
    print("etude de "+str(n))
    if (n%2 == 0):
        moitie = int(n/2)+1
    else:
        moitie = int(n/2)
    for x in range(3,moitie,2):
        t = (((float(n)-float(x))**2)/0.25)-((float(x)**2)/0.25)**0.5
    print(" "+str(x)+" --> "+str(t))

```

```

emacs25@vella                               emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help         File Edit Options Buffers Tools Python Help
[Icons] [Icons]

37 --> 16.24807680927192
39 --> 14.696938456699069
41 --> 12.96148139681572
43 --> 10.954451150183322
45 --> 8.48528137423857
47 --> 4.898979485566356
etude de 98
3 --> 33.57082066318904
5 --> 32.83291031876401
7 --> 32.07802986469088
9 --> 31.304951684997057
11 --> 30.512292604784715
13 --> 29.698484809834994
15 --> 28.861739379323623
17 --> 28.0
19 --> 27.110883423451916
21 --> 26.19160170741759
23 --> 25.238858928247925
25 --> 24.24871130596428
27 --> 23.2163735324878
29 --> 22.135943621178654
31 --> 21.0
33 --> 19.79898987322333
35 --> 18.520259177452136
37 --> 17.146428199482248
39 --> 15.652475842498529
41 --> 14.0
43 --> 12.12435565298214
45 --> 9.899494936611665
47 --> 7.0
49 --> 0.0
etude de 100
3 --> 34.27827300200522
5 --> 33.54101966249684
7 --> 32.78719262151
-:--- montrevoir2 92% L620 (Fundame

```

```

emacs25@vella                               emacs25@vellachemla-X510UA
File Edit Options Buffers Tools Help         File Edit Options Buffers Tools Python Help
[Icons] [Icons]

39 --> 10.392304845413264
41 --> 9.16515138991168
43 --> 7.745966692414834
45 --> 6.0
47 --> 3.4641016151377544
etude de 98
3 --> 23.73815494093844
5 --> 23.2163735324878
7 --> 22.68259244442751
9 --> 22.135943621178654
11 --> 21.575449010391416
13 --> 21.0
15 --> 20.40833163195855
17 --> 19.79898987322333
19 --> 19.170289512680814
21 --> 18.520259177452136
23 --> 17.8465682975475
25 --> 17.146428199482248
27 --> 16.416455159382004
29 --> 15.652475842498529
31 --> 14.849242404917497
33 --> 14.0
35 --> 13.095800853708795
37 --> 12.12435565298214
39 --> 11.067971810589327
41 --> 9.899494936611665
43 --> 8.573214099741124
45 --> 7.0
47 --> 4.949747468305833
49 --> 0.0
etude de 100
3 --> 24.238399287081645
5 --> 23.717082451262844
7 --> 23.18404623873926
9 --> 22.638462845343543
-:--- montrevoir2 92% L622 (Fundame

```

```
emacs25@vellachema-X510UA
File Edit Options Buffers Tools Help
[Icons]
etude de 98
3 --> 35.799842285673345
5 --> 34.84455276141247
7 --> 33.77869150810907
9 --> 32.59053324422381
11 --> 31.266138609825908
13 --> 29.787341510878647
15 --> 28.129801177500663
17 --> 26.25969208828292
19 --> 24.12763679150648
21 --> 21.656407827707714
23 --> 18.712104562097153
25 --> 15.019035540654023
27 --> 9.761440174775146
29 --> (3.9070976534407873e-16+6.380774695464947j)
31 --> (8.270414660659817e-16+13.506612137341152j)
33 --> (1.1120999020781474e-15+18.161969685503358j)
35 --> (1.3457191154041743e-15+21.97726097583591j)
37 --> (1.5513151912743178e-15+25.33489970094894j)
39 --> (1.7388567645280013e-15+28.397686022430975j)
41 --> (1.91365932500118e-15+31.25242847706856j)
43 --> (2.0789397476631412e-15+33.95164628071899j)
45 --> (2.2368070459158335e-15+36.529831253765344j)
47 --> (2.388734046421778e-15+39.01098746324095j)
49 --> (2.5357870594556593e-15+41.41255848169731j)
etude de 100
3 --> 36.557195891213695
5 --> 35.606981658898626
7 --> 34.54810311104546
9 --> 33.370217688403365
11 --> 32.06021121042628
13 --> 30.60112042766688
15 --> 28.97042827239035

emacs25@vellachema-X510UA
File Edit Options Buffers Tools Python Help
[Icons]
em = 0.577215664
rac2sur2 = 0.70710678118
for n in range(6,102,2):
    print("etude de "+str(n))
    if (n%2 == 0):
        moitie = int(n/2)+1
    else:
        moitie = int(n/2)
    for x in range(3,moitie,2):
        t = (((float(n)-float(x))**2)+1/7)-((float(x)**2)*6/7)**0.5
        print(" "+str(x)+" --> "+str(t))

:--- resellip3 93% L615 (Fundamental)
:--- resellipse.py All L10 (Python)
Wrote /home/vella-chema/Desktop/resellipse.py
```