

18.781 In-Class Discussion, September 12, 2007

```
parisize = 4000000, primelimit = 500000
? Sumprime(n)=c=1/2;for(k=2,n/2,if(isprime(2*k-1),c=c+1/(2*k-1)));c
? Sumprime(5000)
%1 = 31866706710225477354942453991150193443771394636279620580245920364558481153
7092601031790457678624317804048082456051288427834396200848880639008837657171305
1163993678293943712421655370654467406461649796974228046983683518812818938032402
8504005028630056730600324468569866640257578675261832195703924630748418485374753
1339710083113801078525980510255134993546490602585435825001852153610523745997680
0362187805142772606573832654031741044611029451864029656351788542295938296302817
8248353332049115653037570971631428892557793608214600801407024500993816907042376
4348961493151480900911923638486721656103199797130862059963780295646905514408552
7957514035623015457929530463218199685377846490367774576482299321803956072645602
8134654832139699476445257303285424080491758739069052838646870397433437906969648
7211857141914193995385566116688469135659981691061379396145324821230747436933386
3054299242977493423738194621751931094587664824064590026472625987869262462309167
6693572709019992474874351165811737310711827644193256707565503668261838293793894
0088894935566332112206104617009833616434819105278869087250408601484173075856575
7348543015395084696115319620131289701971946532670488359939804937255705843392526
1847116916270147189120014254777917808060322182178593149750267428222136013976493
3075340972379437494972660247024709408145526592503603489992523257296099474830069
5224101627242766135855202412634436161506798734598211081334834438369439970398752
8007021477630292498518103521840695238099258378599600008734633926167221470638062
1183587154498792815905347330520026888206903586908661257722990191296763112709188
2373239266179201085701637921227833859270041063845420350978489975143434499412847
0504882562276278203205361392427825548365175517848271135175051957645199301970861
4581882071776982468167878765321563677788551682681186069570926888167520132743477
4701625414156976811811703248545869418344108623474431671739177864868425214451184
8823702473113531593496700410419367983977343116567772634211141227089002614612302
1753148871202662958254407451512339350170986005359304789797377932186568356773710
0741949525605261599831410033505629679183978958973166582228642378262769205732115
6363099567749101116455032512848478419805816539577231847601754550573309600201401
4134776055440452065971260637963570403128633738709422711941400661718079201540788
1200436951302843139640707284347726654198219513898555458278404292159720021679563
7003912318105091115464161655639093632665941265253051770111602883712866557260783
9179729507424268828484766881858727884129893832987810900242814490134998536526334
0948835248477449968577273396453249359568903986130568875507640775890859854476964
180632222472379653633557120873804559984527098207303427251770519881424112004030
? c*1.0
%2 = 2.405188657690575355228107209
? Sumprime(n)=c=1/2;for(k=2,n/2,if(isprime(2*k-1),c=c+1/(2*k-1)));c*1.0+1
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? Sumprime(5000)
%3 = 3.405188657690575355228107209
? Sumprime(50000)
%4 = 3.643250316571922155017616453
? Sumprime(5*10^6)
*** the PARI stack overflows !
current stack size: 4.0 Mbytes
[hint] you can increase GP stack with allocatemem()

? ?allocatemem()
allocatemem({s=0}): allocates a new stack of s bytes. doubles the stack if s
is omitted.

? allocatemem
*** Warning: doubling stack size; new stack = 8.0 MBytes.
? Sumprime(n)=c=0.5;for(k=2,n/2,if(isprime(2*k-1),c=c+1/(2*k-1)));c+1
? Sumprime(5*10^6)
%5 = 3.997523012298845777861240829
? ##
*** last result computed in 30,851 ms.
? Sumprime(5*10^7)
%6 = 4.136624994957780847411122312
? ##
*** last result computed in 5mn, 26,588 ms.

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