

# Consideration of the Riemann hypothesis

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## Abstract

I considered Riemann's hypothesis. At first, the purpose was to prove, but can not to prove.

It is written in the middle of the proof, but it can not been proved at all.

(The calculation formula is also written, but the real value 0.5 was not shown at all)

The non-trivial zero values match perfectly in the formula of this paper.

However, the formula did not reach the real value 0.5.

In this case, it only reaches the pole near the real value 0.5.

## 1 Introduction

$$\sum_{n=1}^{\infty} \frac{1}{n^s} \quad (1)$$

$s=a+bi$  and  $a=c$ ,  $b=x$ (non-trivial zero values)

$$\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n^{2c}} = \sum_{n=1}^{\infty} \left[ \frac{1}{(2n-1)^c} - \frac{1}{(2n)^c} \right] \quad (2)$$

$$\frac{1}{(2n-1)^{2c}} = \frac{(2n-1)^{ix}}{(2n-1)^c} \quad (3)$$

$$\frac{1}{(2n)^{2c}} = \frac{(2n)^{ix}}{(2n)^c} \quad (4)$$

$$\text{insert } \cos\theta + i \sin\theta = e^{i\theta} \quad (5)$$

$$\sum_{n=1}^{\infty} \left[ \frac{\cos(x \ln(2n-1)) + i \sin(x \ln(2n-1))}{(2n-1)^c} - \frac{\cos(x \ln(2n)) + i \sin(x \ln(2n))}{(2n)^c} \right] \quad (6)$$

$$\sum_{n=1}^{\infty} \left[ \frac{\sin(x \ln(2n-1))}{(2n-1)^c} - \frac{\sin(x \ln(2n))}{(2n)^c} \right] \quad (7)$$

$$\sum_{n=1}^{\infty} \left[ \frac{\cos(x \ln(2n-1))}{(2n-1)^c} - \frac{\cos(x \ln(2n))}{(2n)^c} \right] \quad (8)$$

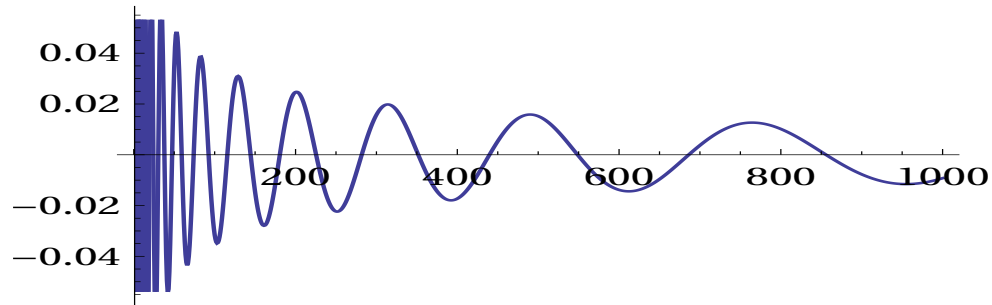
Although x is treated as a real number, x is a non-trivial zero values.

## 2 Examples

(14.1347- 0.001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1337) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(14.1337) \ln(2n)]}{(2n)^{0.5}} \right] \quad (9)$$

= -0.009225305555779525779463237679646088942314....

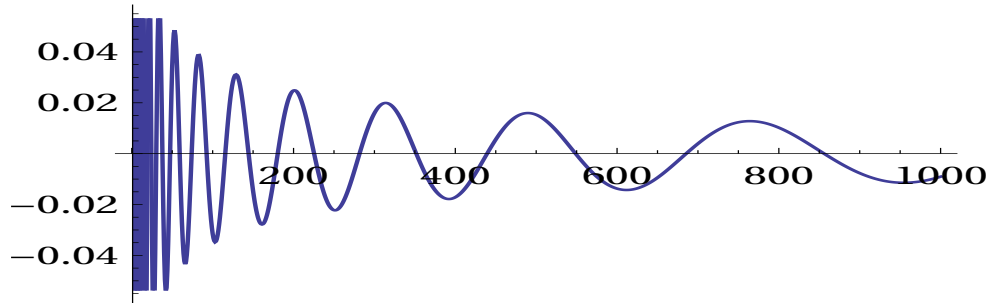


[10000]= 0.0004908595315669325720  
 [100000]= 0.0009616985990964528738  
 [1000000]= 0.0001156893510012422144  
 [10000000]= -0.0001607114065385512091  
 [100000000]= -0.0001509936635404196949  
 not converge

(14.1347 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(14.1347) \ln(2n)]}{(2n)^{0.5}} \right] \quad (10)$$

= -0.009063013671335821519956190406232181070163....

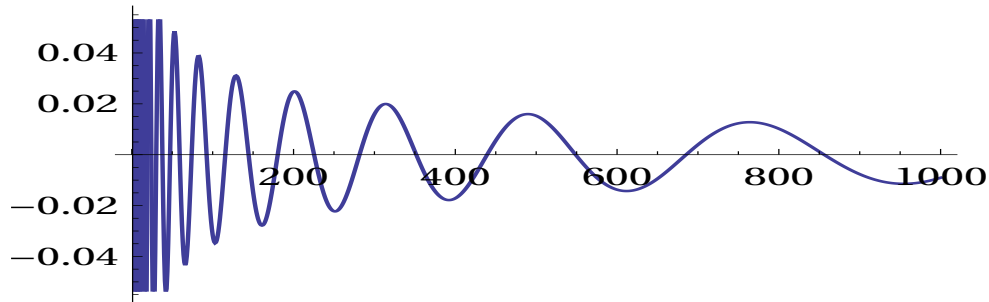


[10000]=0.0006381011115495365026  
 [100000]=0.0010780432416684295090  
 [1000000]=0.0002245632899122298001  
 [10000000]=-0.0000496479275200912434  
 [100000000]=0.0000382288508812898928  
 converge

(14.1347+ 0.01=14.1447)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1447) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(14.1447) \ln(2n)]}{(2n)^{0.5}} \right] \quad (11)$$

= -0.007243403455155722480043192935285864376....

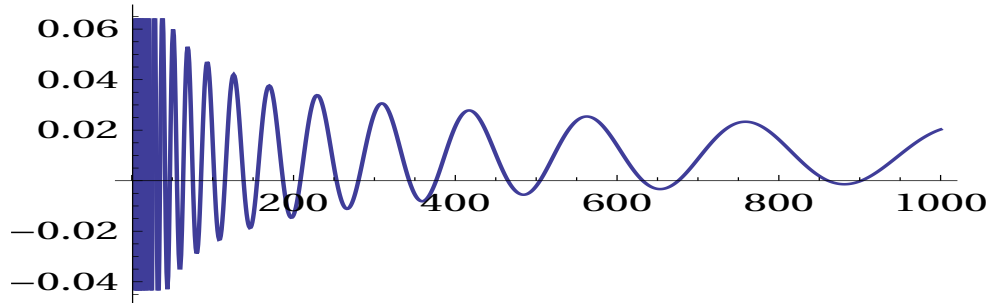


[100000]=0.0024009439859531173274  
 [1000000]=0.0014791973611828108937  
 [10000000]=0.0012301792406834031936  
 [100000000]=0.0012585154544851192247  
 not converge

(21.022 - 0.01=21.012)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.0120) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(21.0120) \ln(2n)]}{(2n)^{0.5}} \right] \quad (12)$$

= 0.0202848925540409088275801345992109429....

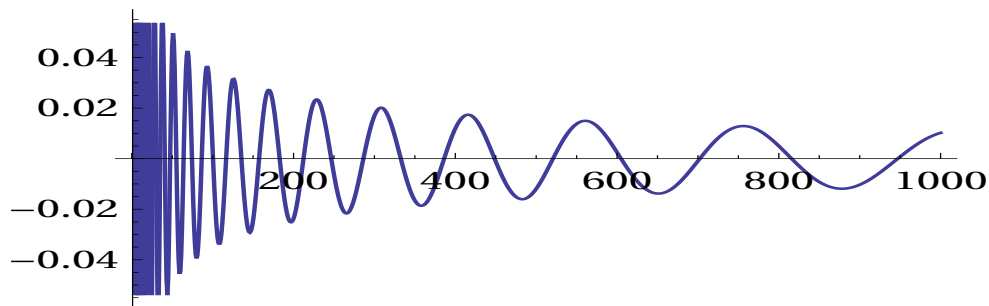


[10000]= 0.0079126943260740684183  
 [100000]= 0.0100352227300254896042  
 [1000000]= 0.0108565621646344659390  
 [10000000]= 0.0104843503975115531074  
 [100000000]=0.0104746550659218524287  
 not converge

(21.0220 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.0220) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(21.0220) \ln(2n)]}{(2n)^{0.5}} \right] \quad (13)$$

= 0.01020305097297970756165091906533606755457....

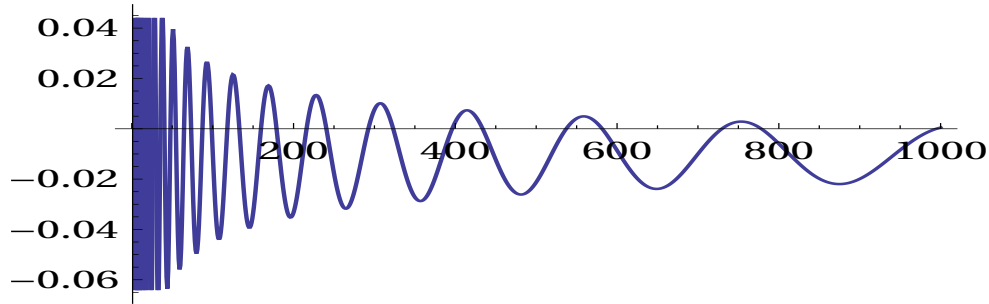


[10000]=-0.0023018856406172511289  
 [100000]=-0.0005496921657573621087  
 [1000000]=0.0003817627764431225329  
 [10000000]=0.0000380957809653702473  
 [100000000]=0.0000070544092957442871  
 converge

(21.0220+0.01=22.0320)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.0320) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(21.0320) \ln(2n)]}{(2n)^{0.5}} \right] \quad (14)$$

0.009213501661674673769220937361896999026864....

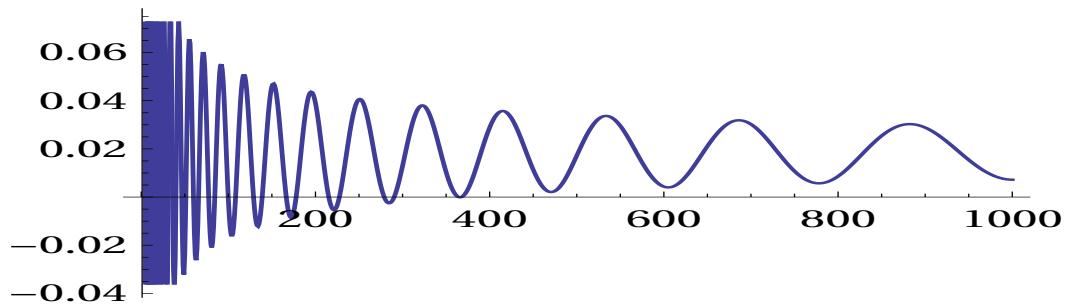


[10000]=-0.0120947862362253185514  
 [100000]=-0.0107270996987019039820  
 [1000000]=-0.0097014813569226230477  
 [10000000]=-0.0100093633835118597103  
 [100000000]=-0.0100605988203420360777  
 not converge

(25.0109-0.01=25.0009)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0009) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(25.0009) \ln(2n)]}{(2n)^{0.5}} \right] \quad (15)$$

= 0.007208956867091058558975679870786427234417....

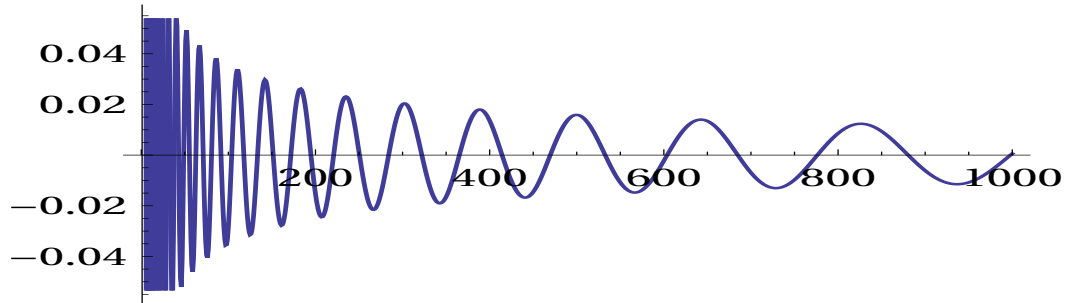


[10000]=-0.0109792843912182164212  
 [100000]=-0.0129018421697284571548  
 [1000000]=-0.0138749666260562180137  
 [10000000]=-0.0140059815308212903817  
 [100000000]=-0.0139521725046484450922  
 not converge

(25.0109 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0109) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(25.0109) \ln(2n)]}{(2n)^{0.5}} \right] \quad (16)$$

= 0.00056641687695438541751539844982701950807....

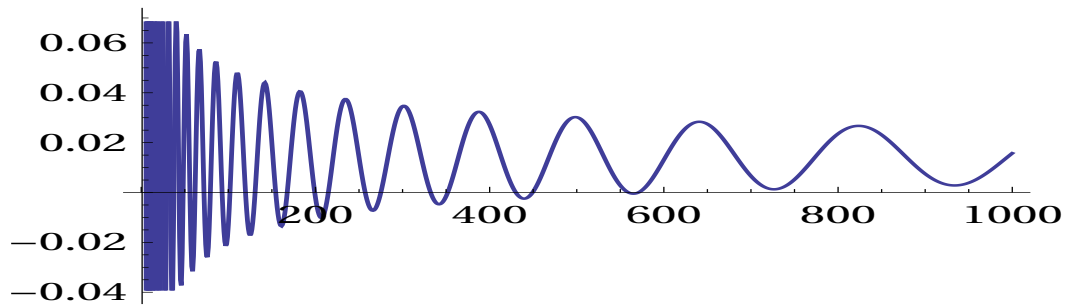


[10000]=0.0031794539716973957769  
 [100000]=0.0010129648076460495264  
 [1000000]=0.0000527725990851316977  
 [10000000]=-0.0000375544556307302004  
 [100000000]=0.0000296005134758246658  
 converge to 0.

(25.0109+0.01=25.0209)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0209) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(25.0209) \ln(2n)]}{(2n)^{0.5}} \right] \quad (17)$$

= 0.0157543246388970080680775464029165522593....

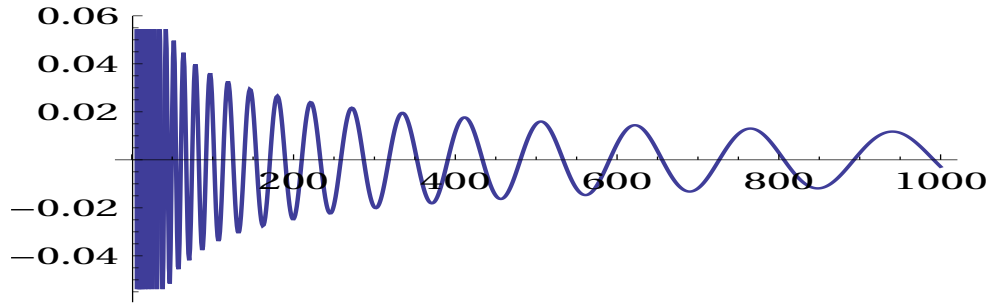


[10000]=0.0176700155045441953394  
 [100000]=0.0152759853426839738166  
 [1000000]=0.0143430581229324321385  
 [10000000]=0.0142960181287969719660  
 [100000000]=0.0143748762762403066440  
 It does not converge to 0.

(30.4249 - 0.01=30.4149)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(30.4149) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(30.4149) \ln(2n)]}{(2n)^{0.5}} \right] \quad (18)$$

= -0.00285640901825724095173253445652917101....

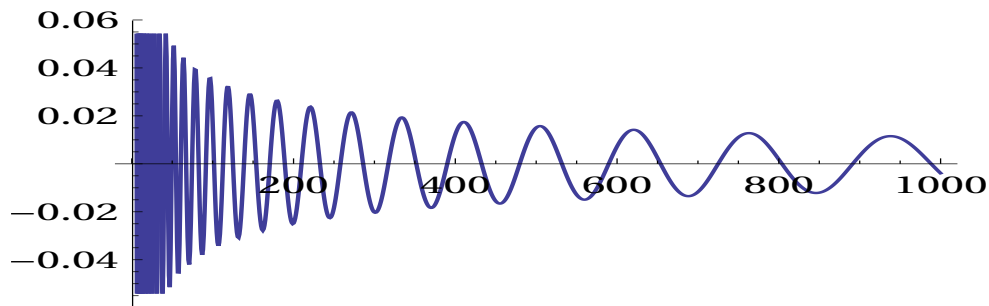


[10000]= -0.0030388948279709746512  
 [100000]= -0.0007134501610826229565  
 [1000000]= 0.0002059339855287456835  
 [10000000]= 0.0003267595999544659156  
 [100000000]=0.0002812429594458024443  
 It does not converge to 0.

(30.4249 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(30.4249) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(30.4249) \ln(2n)]}{(2n)^{0.5}} \right] \quad (19)$$

= -0.00390909023513576029354093055012477....

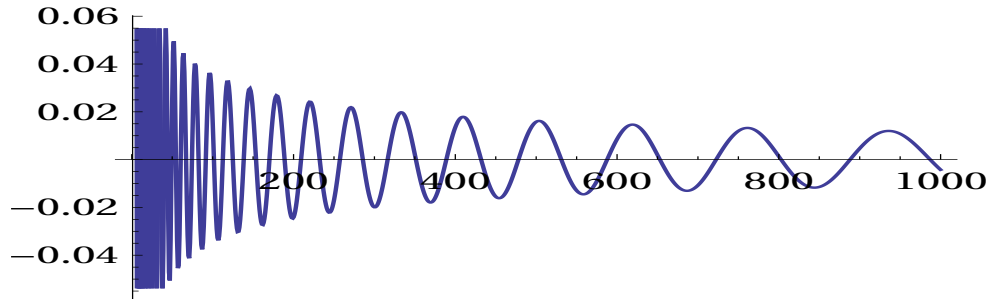


[10000]=-0.0033980444366637999748  
 [100000]=-0.0008825379930712329637  
 [1000000]=0.0000110835698303654228  
 [10000000]=0.0000925555270059981509  
 [100000000]=0.0000335427373431973819  
 converge to 0.

(30.4249+0.01=30.4349)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(30.4349) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(30.4349) \ln(2n)]}{(2n)^{0.5}} \right] \quad (20)$$

-0.004252440526184255650794899059877558....

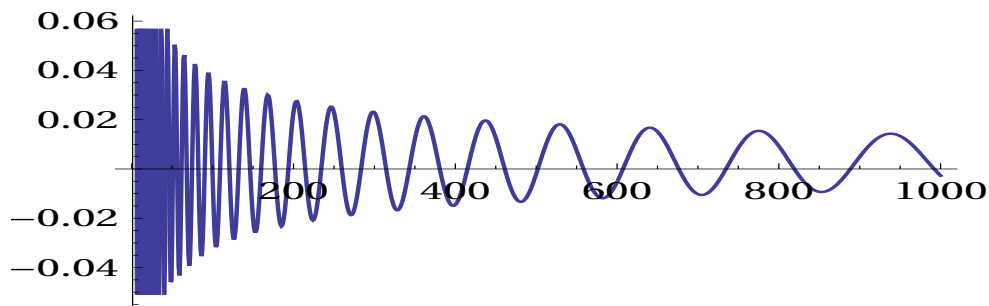


[10000]=-0.0030371364011003336783  
 [100000]=-0.0003517351831407830760  
 [1000000]=0.0005027598472046472316  
 [10000000]=0.0005425030774031609814  
 [100000000]=0.0004713839500665595187  
 It does not converge to 0.

(32.9351 -0.01=32.9251)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(32.9251) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(32.9251) \ln(2n)]}{(2n)^{0.5}} \right] \quad (21)$$

= -0.0027020078807583326034090009613837....



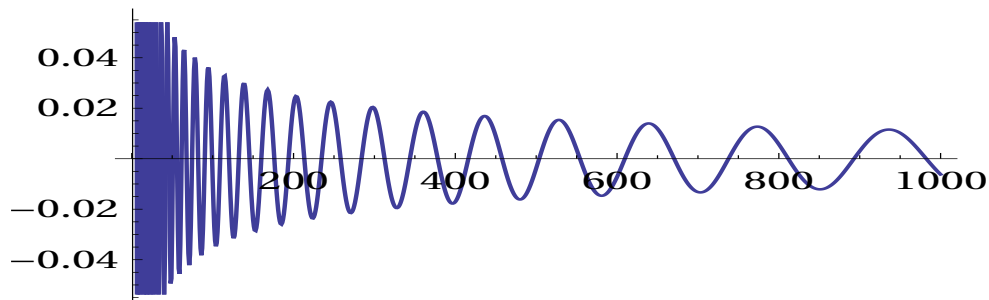
[10000]=-0.0000354846146526247106  
 [100000]=0.0016892426191820577100  
 [1000000]=0.0024278271134448151970  
 [10000000]=0.0026830551451150455762  
 [100000000]=0.0027569421199088403086  
 It does not converge to 0.



(32.9351 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(32.9351) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(32.9351) \ln(2n)]}{(2n)^{0.5}} \right] \quad (22)$$

= -0.0062113502323384285481355315202462....

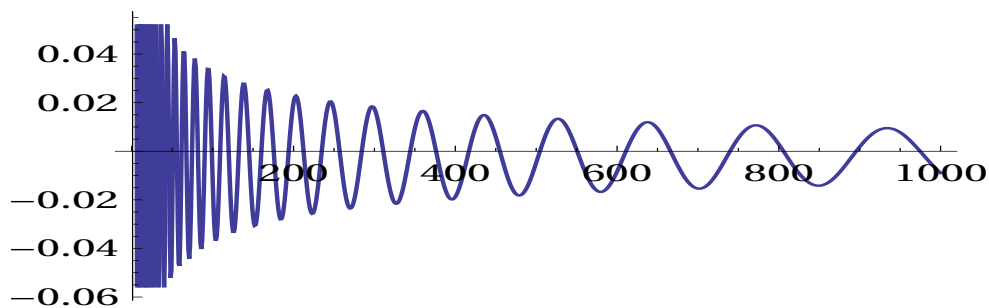


[10000]=-0.0030187974933814079245  
 [100000]=-0.0011198358022496601640  
 [1000000]=-0.0003446395140902848734  
 [10000000]=-0.0000903248133043883523  
 [100000000]=-0.0000221594074273025880  
 converge to 0.

(32.9351+0.01= 32.9451)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(32.9451) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(32.9451) \ln(2n)]}{(2n)^{0.5}} \right] \quad (23)$$

= -0.00893128024726900802406637151594713....

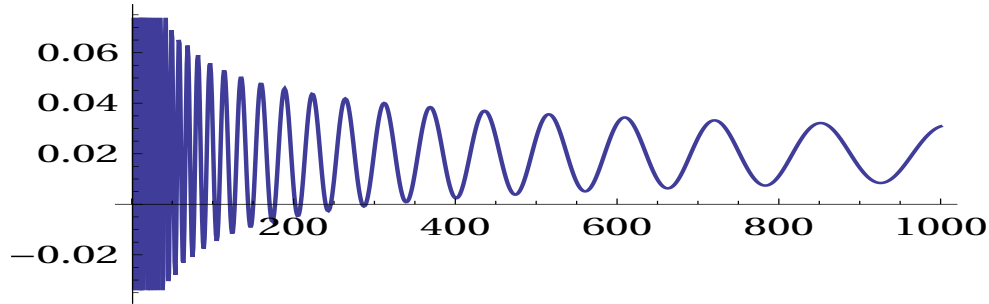


[10000]=-0.0052190215982851530935  
 [100000]= -0.0031587929966095914039  
 [1000000]=-0.0023564632518479375171  
 [10000000]=-0.0021078236331256560571  
 [100000000]=-0.0020471956046321931888  
 It does not converge to 0.

(37.5862- 0.01= 37.5762)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(37.5762) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(37.5762) \ln(2n)]}{(2n)^{0.5}} \right] \quad (24)$$

0.030834015062143617825619153097923....

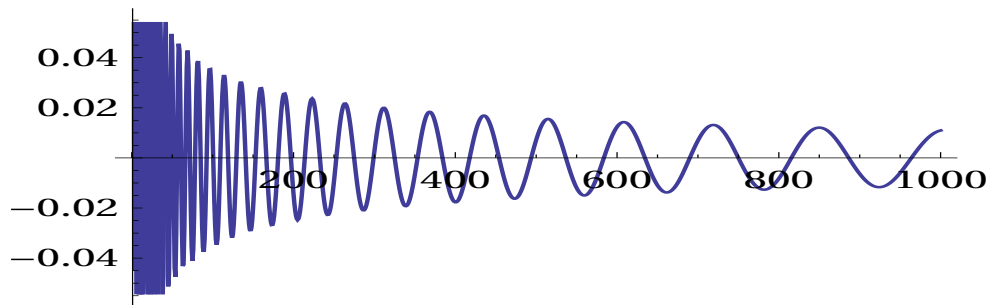


[10000]=0.0195359368608285441371  
 [100000]=0.0189196414524257991441  
 [1000000]=0.0199973689427138945351  
 [10000000]=0.0201460868782911001196  
 [100000000]=0.0200503760585013374174  
 It does not converge to 0.

(37.5862 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(37.5862) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(37.5862) \ln(2n)]}{(2n)^{0.5}} \right] \quad (25)$$

0.0109417953902648082779919017459911428....

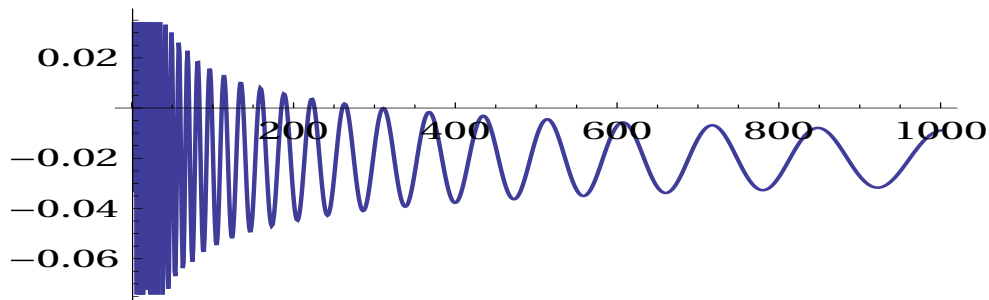


[10000]=-0.0001969237257829878525  
 [100000]=-0.0011553773481789157869  
 [1000000]=-0.0001343416061451328184  
 [10000000]=0.0000587167172489908842  
 [100000000]=-0.0000249459169129748873  
 converge to 0.

$$(37.5862 + 0.01 = 37.5962)$$

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(37.5962) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(37.5962) \ln(2n)]}{(2n)^{0.5}} \right] \quad (26)$$

$$= -0.0089460208968219524737939523273562\dots$$



$$[10000] = -0.0198604388135492707090$$

$$[100000] = -0.0211460105720736035728$$

$$[1000000] = -0.0201963046130781143095$$

$$[10000000] = -0.0199636989117923310810$$

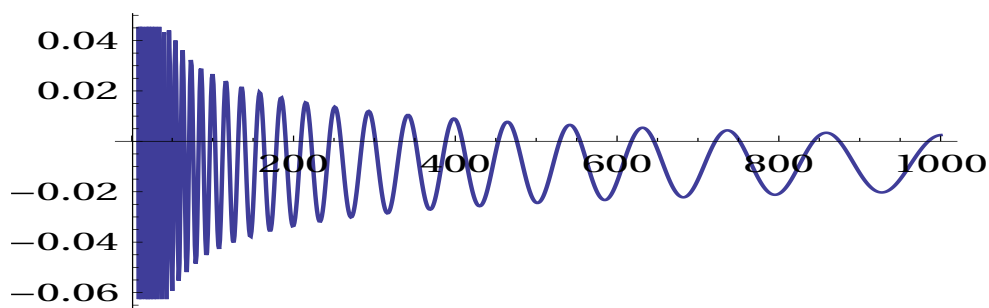
$$[100000000] = -0.0200331095329610020528$$

It does not converge to 0.

$$(40.9187 - 0.01 = 40.9087)$$

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(40.9087) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(40.9087) \ln(2n)]}{(2n)^{0.5}} \right] \quad (27)$$

$$= 0.00248093561144567463626037082051005\dots$$



$$[10000] = -0.0051677833489781012030$$

$$[100000] = -0.0075751568755802805785$$

$$[1000000] = -0.0083312236007446627967$$

$$[10000000] = -0.0085680467375924898588$$

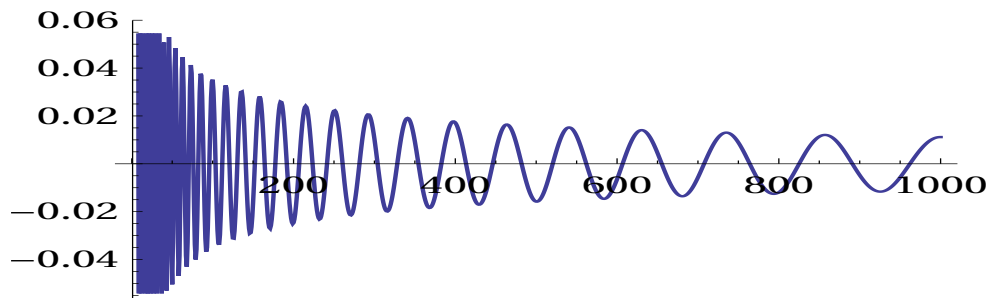
$$[100000000] = -0.0086420189500060091981$$

It does not converge to 0.

(40.9187 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(40.9187) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(40.9187) \ln(2n)]}{(2n)^{0.5}} \right] \quad (28)$$

= 0.011161443040664347323838871759731....

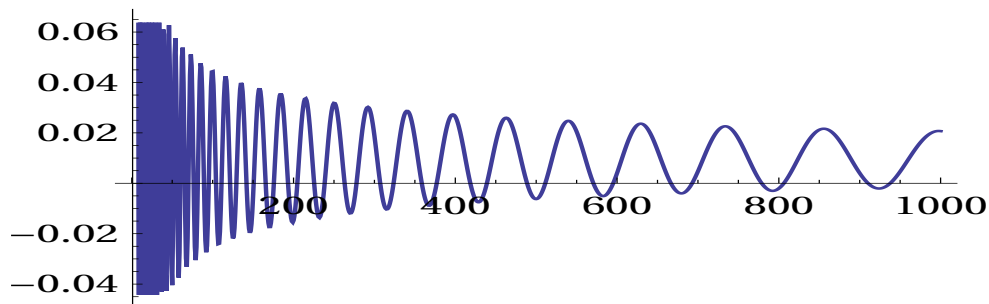


[10000]=0.0035169104243255207287  
 [100000]=0.0010989171823213882747  
 [1000000]=0.0003349281342070774877  
 [10000000]=0.0000937391247718045875  
 [100000000]=0.0000176604734510305102  
 converge to 0.

(40.9187 +0.01= 40.9287)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(40.9287) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(40.9287) \ln(2n)]}{(2n)^{0.5}} \right] \quad (29)$$

= 0.0206878312138471015409368846686....

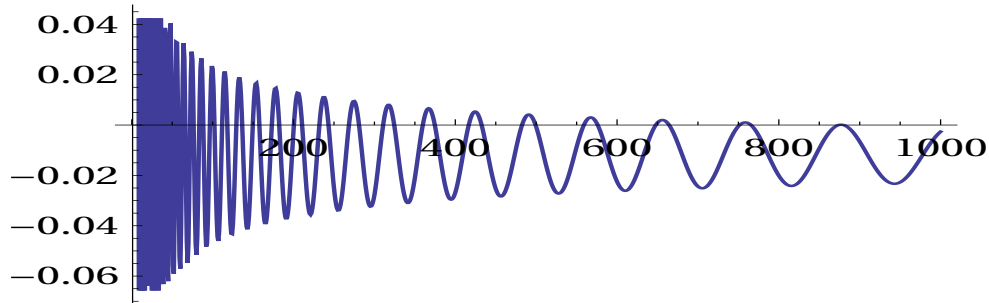


[10000]=0.0130774066708262623471  
 [100000]=0.0106668189248659613794  
 [1000000]=0.0099041156067228991455  
 [10000000]=0.0096628311670022160734  
 [100000000]=0.0095865032449445348323  
 It does not converge to 0.

(43.3271 - 0.01 = 43.3171)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(43.3171) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(43.3171) \ln(2n)]}{(2n)^{0.5}} \right] \quad (30)$$

= -0.0026271844642819244706123872647....

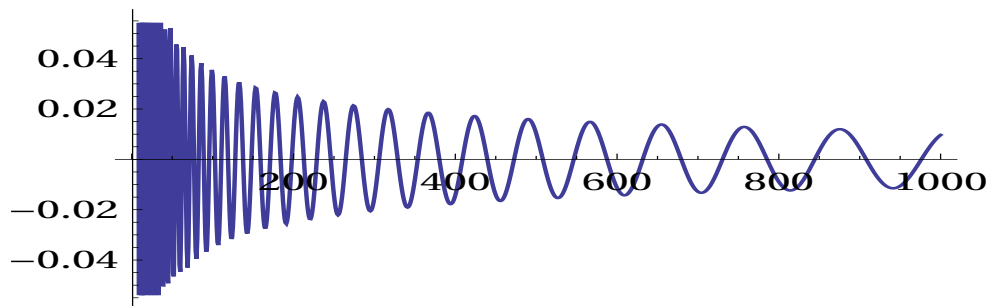


[10000] = -0.0112300972457555110762  
 [100000] = -0.0124630776424045092848  
 [1000000] = -0.0121568283539716555375  
 [10000000] = -0.0118974800268731202568  
 [100000000] = -0.0118126252156423548756  
 It does not converge to 0.

(43.3271 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(43.3271) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(43.3271) \ln(2n)]}{(2n)^{0.5}} \right] \quad (31)$$

= 0.009670906260156884143514330311804340....

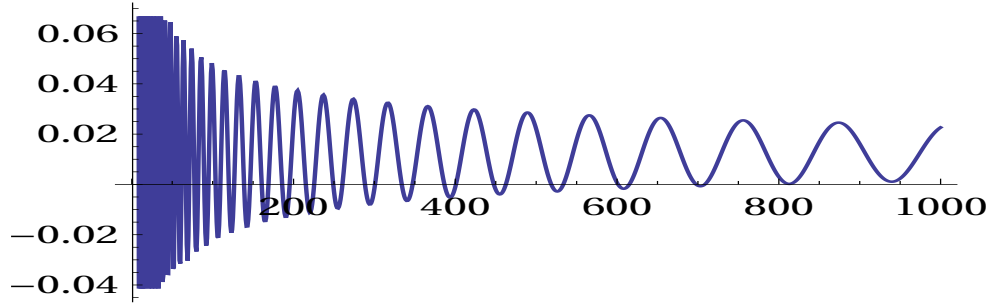


[10000] = 0.0009520515105505345573  
 [100000] = -0.0005078252057554809556  
 [1000000] = -0.0003051887688908388216  
 [10000000] = -0.0000672058546933808392  
 converge to 0.

$$(43.3271 + 0.01 = 43.3371)$$

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(43.3371) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(43.3371) \ln(2n)]}{(2n)^{0.5}} \right] \quad (32)$$

$$= 0.0096709062601568841435143303118\dots$$

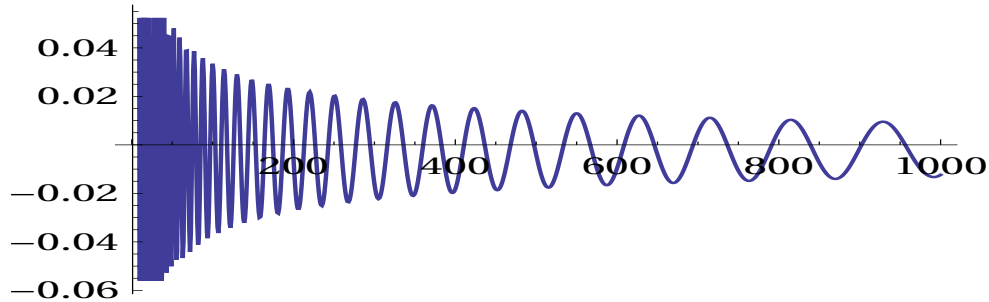


[10000]=0.0138611334436689482424  
 [100000]=0.0121914127967915099371  
 [1000000]= 0.0122894928302838823964  
 [10000000]=0.0125018265102611169509  
 It does not converge to 0.

$$(48.0052 - 0.01 = 47.9952)$$

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(47.9952) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(47.9952) \ln(2n)]}{(2n)^{0.5}} \right] \quad (33)$$

$$= -0.012377763685720218921643303546\dots$$

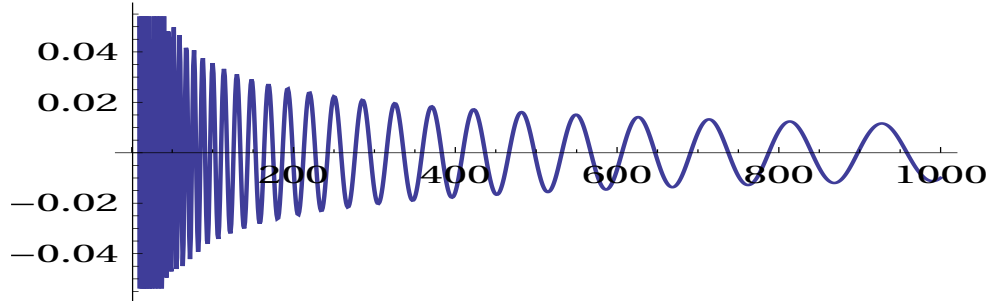


[10000]=0.0000285799991242556995  
 [100000]=-0.0021376413863578289966  
 [1000000]=-0.0022192255925806937331  
 [10000000]=-0.0019585239647509334292  
 It does not converge to 0.

(48.0052 is non-trivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(48.0052) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(48.0052) \ln(2n)]}{(2n)^{0.5}} \right] \quad (34)$$

= -0.009954710963835234494265321374....

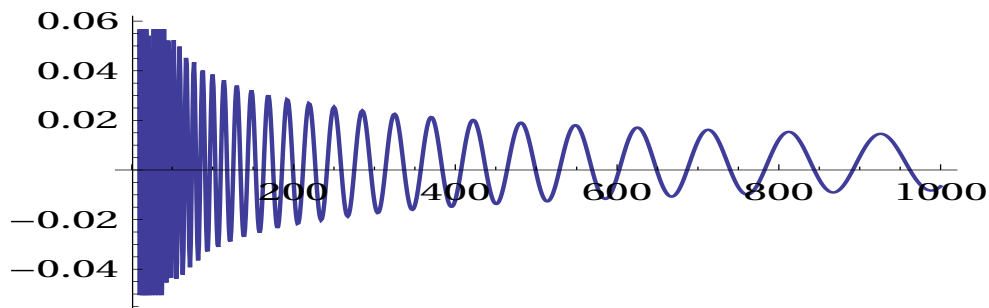


[10000]=0.0018032285340410843938  
 [100000]=0.0000660014107200388242  
 [1000000]=-0.0001954933851270815727  
 [10000000]=0.0001168501874528188322  
 [100000000]=-0.0000222158682941726699  
 converge to 0.

(48.0052 +0.01=48.0152)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(48.0152) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(48.0152) \ln(2n)]}{(2n)^{0.5}} \right] \quad (35)$$

= -0.00659781565293379915294435589....

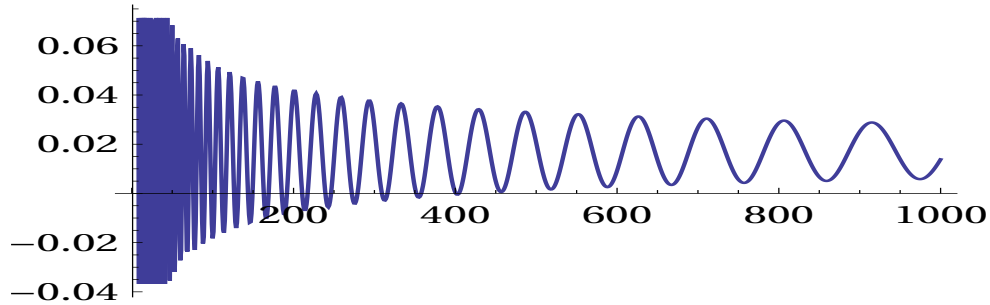


[10000]= 0.0044366094516016078841  
 [100000]=0.0031451285025022525550  
 [1000000]=0.0027088886322526439104  
 [10000000]=0.0030655599344365370811  
 [100000000]=0.0029234203769221956369  
 It does not converge to 0.

(49.7738- 0.01=49.7638)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(49.7638) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(49.7638) \ln(2n)]}{(2n)^{0.5}} \right] \quad (36)$$

= 0.013838181877048842824089368339....

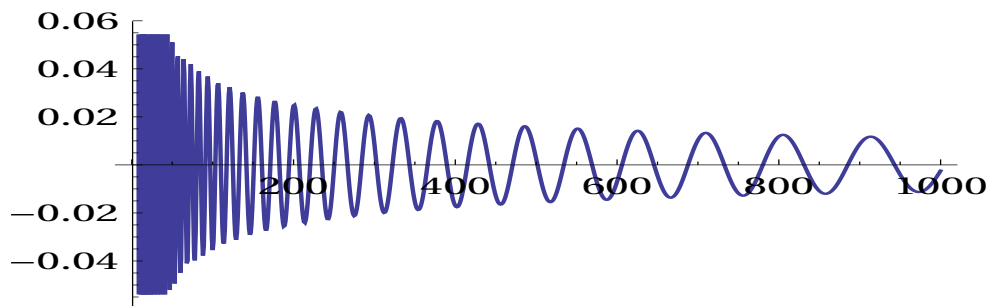


[10000]=0.0204037589236460217834  
 [100000]=0.0176524483959972777747  
 [1000000]=0.0168391658695661756984  
 [10000000]=0.0170716013967882086766  
 [100000000]=0.0171650920761718187024  
 It does not converge to 0.

(49.7738 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(49.7738) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(49.7738) \ln(2n)]}{(2n)^{0.5}} \right] \quad (37)$$

= -0.00242552247843460002977902405986....



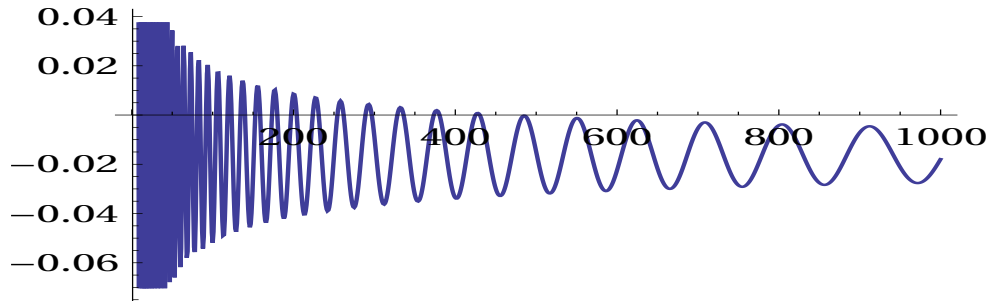
[10000]=0.0034374613798155602418  
 [100000]=0.0004433508278073949134  
 [1000000]=-0.0002692269558208497827  
 [10000000]=0.0000031448364606872906  
 [100000000]=0.0000016971109376292873  
 converge to 0.



(49.7738+ 0.01=49.7838)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(49.7838) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(49.7838) \ln(2n)]}{(2n)^{0.5}} \right] \quad (38)$$

= -0.01792553042791727447634460232379546....

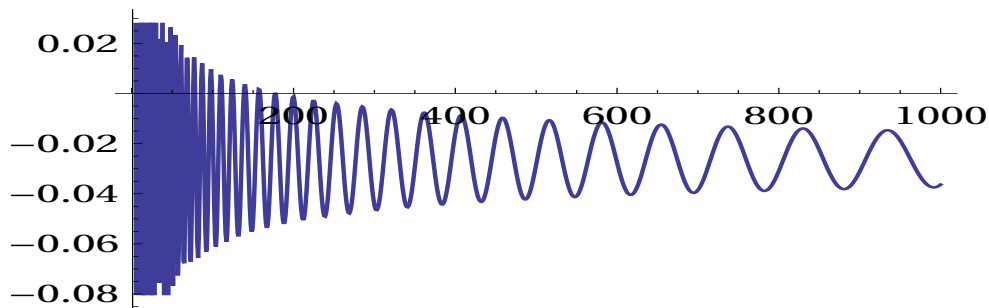


[10000]=-0.0128126155902118996077  
 [100000]=-0.0160221607044494576688  
 [1000000]=-0.0166214463360710926199  
 [10000000]=-0.0163144944504915699601  
 [100000000]=-0.0162474302505595455398  
 It does not converge to 0.

(52.9703 -0.01=52.9603)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(52.9603) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(52.9603) \ln(2n)]}{(2n)^{0.5}} \right] \quad (39)$$

= -0.036355181418336957787246132966042....

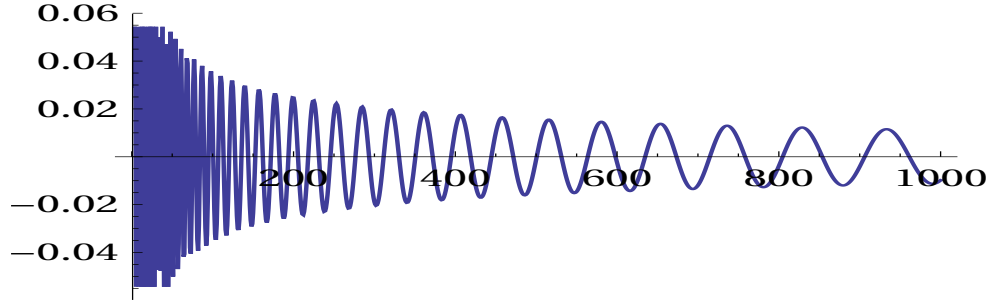


[10000]=-0.0227243930148252754053  
 [100000]=-0.0270512158174514988351  
 [1000000]=-0.0261265188041285185971  
 [10000000]=-0.0261841661259985397647  
 [100000000]=-0.0262460615983426404085  
 It does not converge to 0.

(52.9703 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(52.9703) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(52.9703) \ln(2n)]}{(2n)^{0.5}} \right] \quad (40)$$

=0.0094785200140687480985874....

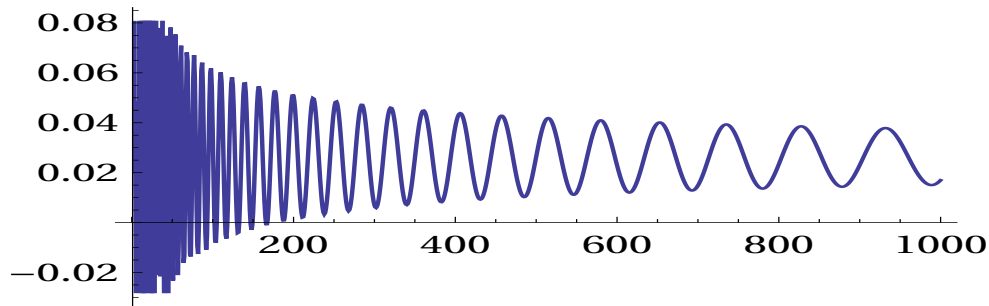


[10000]=0.0034739734404261226469  
 [100000]=-0.0009736503195389328066  
 [1000000]=0.0000840864838235658814  
 [10000000]=-0.0000402288186734236711  
 [100000000]=-0.0000791109926 464973008  
 converge to 0.

(52.9703+ 0.01=52.9803)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(52.9803) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(52.9803) \ln(2n)]}{(2n)^{0.5}} \right] \quad (41)$$

= -0.025638210257456366874529600147.....

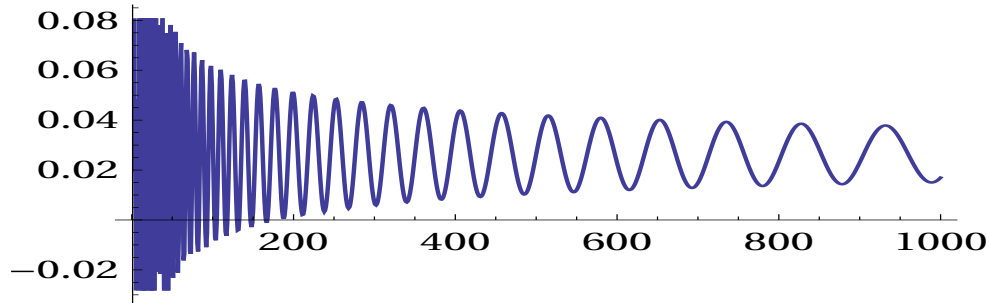


[10000]=0.0298009149632027132981  
 [100000]=0.0252807368145561497941  
 [1000000]=0.0264549124817869858728  
 [10000000]=0.0262664254861674946462  
 [100000000]=0.0262518399485283625283  
 It does not converge to 0.

(56.4462- 0.01=56.4362)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(52.9603) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(52.9603) \ln(2n)]}{(2n)^{0.5}} \right] \quad (42)$$

= 0.02661362850362773718971974636737....

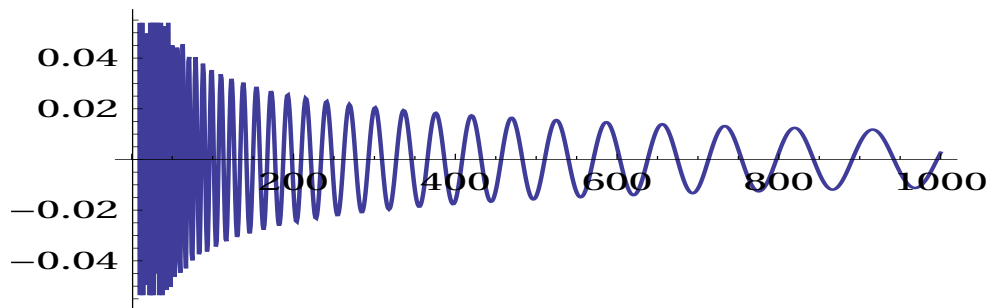


[10000]=0.0215213375849595336953  
 [100000]=0.0256454199486976612554  
 [1000000]=0.0250592910221035559959  
 [10000000]=0.0248005396480182084551  
 [100000000]=0.0249269290298672584194  
 It does not converge to 0.

(56.4462 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(52.9603) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(52.9603) \ln(2n)]}{(2n)^{0.5}} \right] \quad (43)$$

= 0.00265184131020865474001054929688....

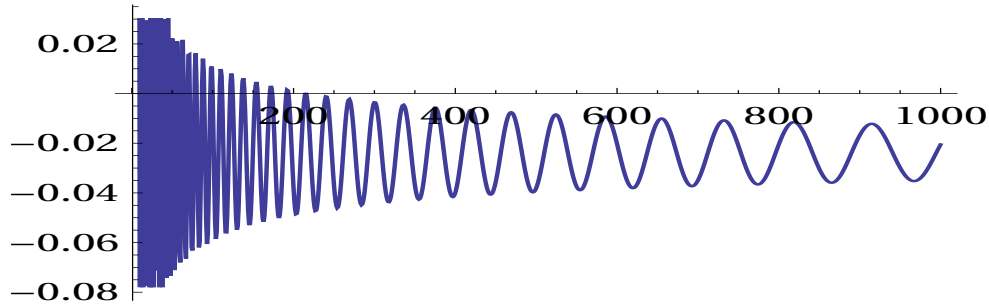


[10000]=-0.0033569416558486631433  
 [100000]=0.0007412009666034661236  
 [1000000]=0.0003082564029241538104  
 [10000000]=0.0000061648527900334994  
 [100000000]=0.0001245625213175247570  
 converge to 0.

(56.4462+ 0.01=56.4562)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(56.4562) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(56.4562) \ln(2n)]}{(2n)^{0.5}} \right] \quad (44)$$

= -0.020518507917862853064414308975874....

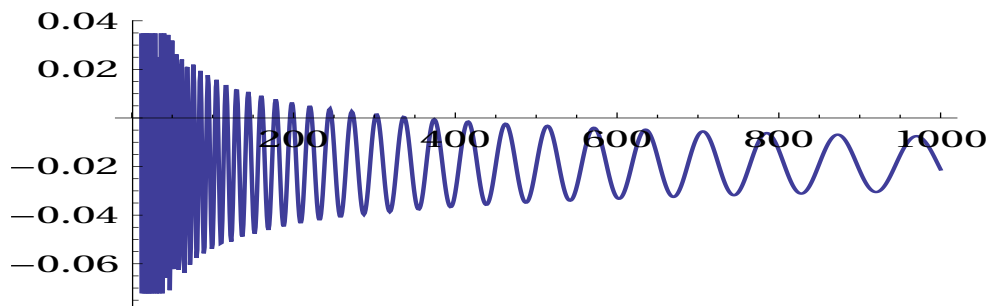


[10000]=-0.0273951025018738907046  
 [100000]=-0.0233662356193842200847  
 [1000000]=-0.0236407303330016561882  
 [10000000]=-0.0239790227111441045516  
 [100000000]=-0.0238720224947596565412  
 It does not converge to 0.

(59.3470 -0.01=59.3370)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(59.337) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(59.337) \ln(2n)]}{(2n)^{0.5}} \right] \quad (45)$$

= -0.02117544407868147009046644659813....

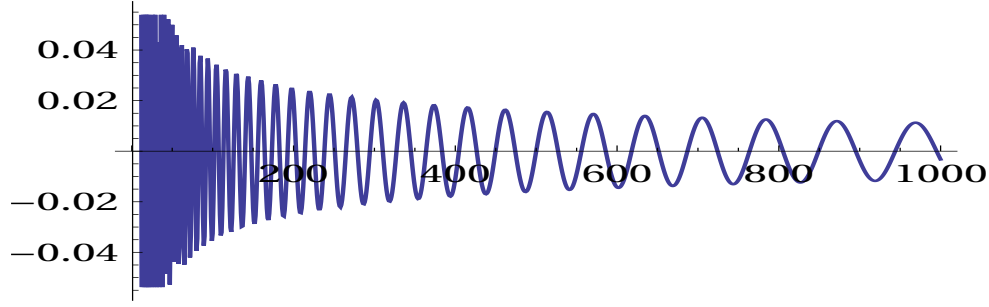


[10000]=-0.0153470935301642623372  
 [100000]=-0.0186832345035133039202  
 [1000000]=-0.0191851092465768376105  
 [10000000]=-0.0188416207259528324658  
 [100000000]=-0.0187981369915568748141  
 It does not converge to 0.

(59.3470 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(59.347) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(59.347) \ln(2n)]}{(2n)^{0.5}} \right] \quad (46)$$

= -0.003249397427817426257297031928....

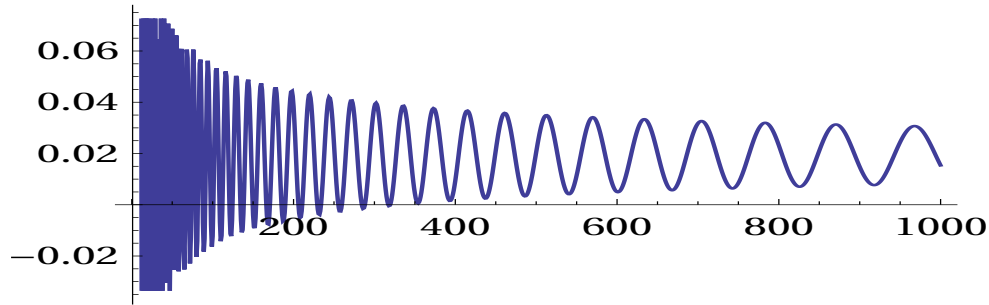


[10000]=0.0033272037996214297653  
 [100000]=0.0001999944676262767817  
 [1000000]=-0.0004266637864907864286  
 [10000000]=-0.0001107110726185287755  
 [100000000]=-0.0000496121879175364362  
 converge to 0.

(59.3470 +0.01=59.3570)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(59.357) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(59.357) \ln(2n)]}{(2n)^{0.5}} \right] \quad (47)$$

= 0.0153674637271575901453641388809426....

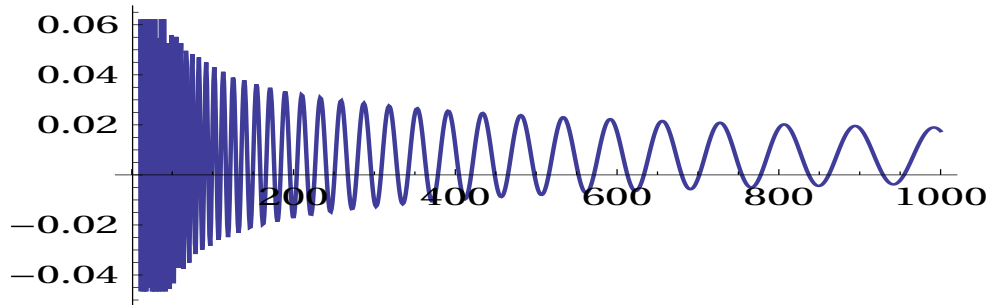


[10000]=0.0226406059802710668549  
 [100000]=0.0197515319113135204288  
 [1000000]=0.0190115164934722205570  
 [10000000]=0.0192934859950445840304  
 [100000000]=0.0193701943315789659739  
 It does not converge to 0.

(60.8318 -0.01=60.8218)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(60.8218) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(60.8218) \ln(2n)]}{(2n)^{0.5}} \right] \quad (48)$$

= 0.017535560535969578881737935277711....

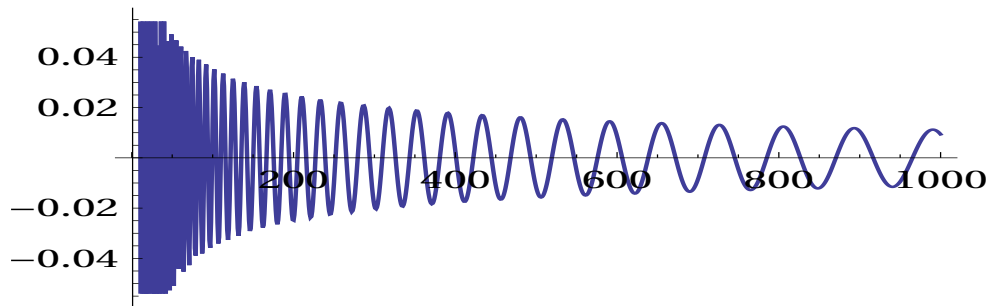


[10000]=0.0053634168996513102365  
 [100000]=0.0071097290555579180371  
 [1000000]=0.0080656137459530069522  
 [10000000]=0.0077438534214533767328  
 [100000000]=0.0076979062723852836186  
 It does not converge to 0.

(60.8318 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(60.8318) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(60.8318) \ln(2n)]}{(2n)^{0.5}} \right] \quad (49)$$

= 0.00935045339563112002833035659962320....

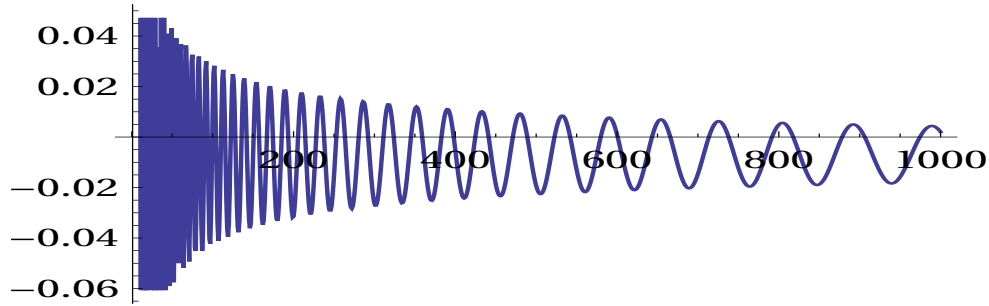


[10000]=-0.0026329489910695037802  
 [100000]=-0.0005211427047658763467  
 [1000000]=0.0003308650681597519964  
 [10000000]=-0.0000234504367579117287  
 [100000000]=-0.0000489979146843307173  
 converge to 0.

(60.8318 +0.01=60.8418)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(60.8418) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(60.8418) \ln(2n)]}{(2n)^{0.5}} \right] \quad (50)$$

= 0.0020340324872867370159732423317063180....



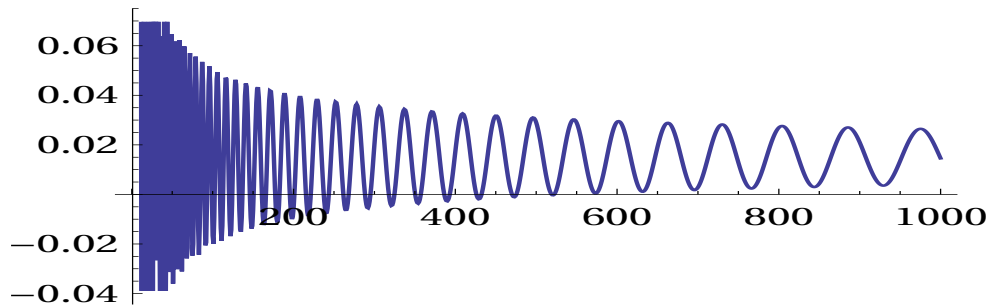
[10000]=-0.0096808902961095563006  
 [100000]=-0.0072217173963795193783  
 [1000000]=-0.0064883898884115342315  
 [10000000]=-0.0068677592993540365410  
 [100000000]=-0.0068719124842466644543

It does not converge to 0.

(65.1125 -0.01=65.1025)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(65.1025) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(65.1025) \ln(2n)]}{(2n)^{0.5}} \right] \quad (51)$$

= 0.01455354766716725850019791519965069408....



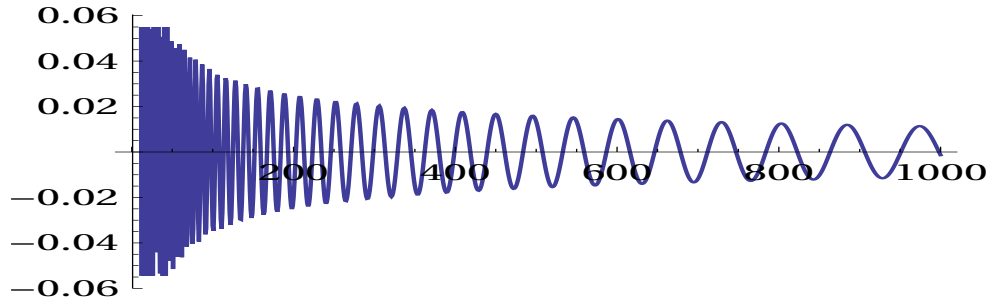
[10000]=0.0178130662139432995039  
 [100000]=0.0162484992948911007027  
 [1000000]=0.0153178316294963045435  
 [10000000]=0.0151053012272931840715  
 [100000000]=0.0151140151910756879994

It does not converge to 0.

(65.1125 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(65.1125) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(65.1125) \ln(2n)]}{(2n)^{0.5}} \right] \quad (52)$$

= -0.0013760257837058265259987472825....

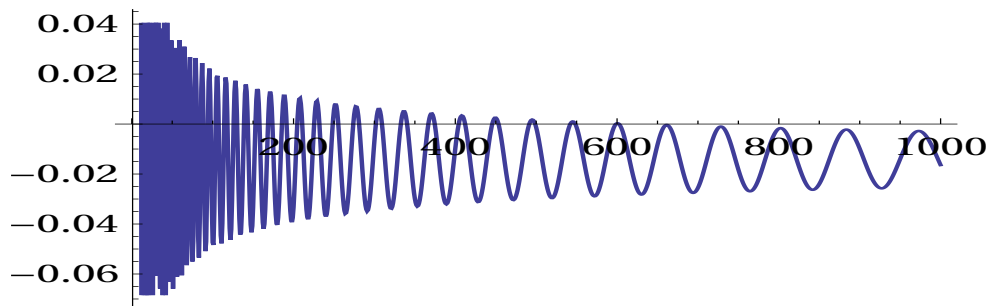


[10000]=0.0024868485483015901651  
 [100000]=0.0011808038497076905112  
 [1000000]=0.0002774053647495089620  
 [10000000]=0.0000397292122541242009  
 [100000000]=0.0000330684738521100997  
 converge to 0.

(65.1125 +0.01=65.1225)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(65.1225) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(65.1225) \ln(2n)]}{(2n)^{0.5}} \right] \quad (53)$$

= -0.01639371889042223977588544036025566....



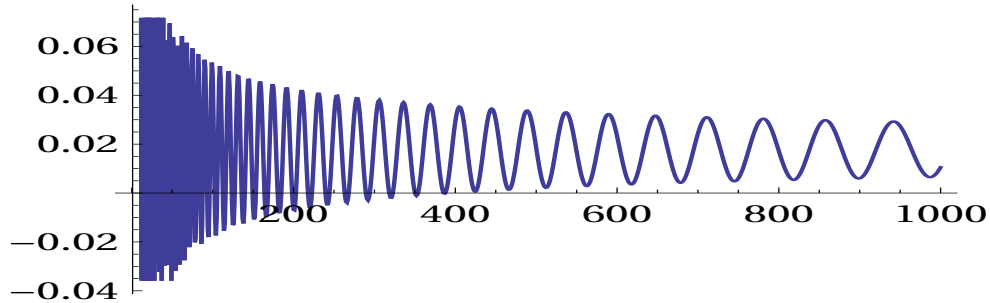
[10000]=-0.0119595467599865334929  
 [100000]=-0.0129999415740921740736  
 [1000000]=-0.0138639340077547287833  
 [10000000]=-0.0141215839941903811144  
 [100000000]=-0.0141431734096021752972  
 It does not converge to 0.



(67.0798 - 0.01 = 67.0698)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(67.0698) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(67.0698) \ln(2n)]}{(2n)^{0.5}} \right] \quad (54)$$

= 0.01054340101298597874827370995356065....

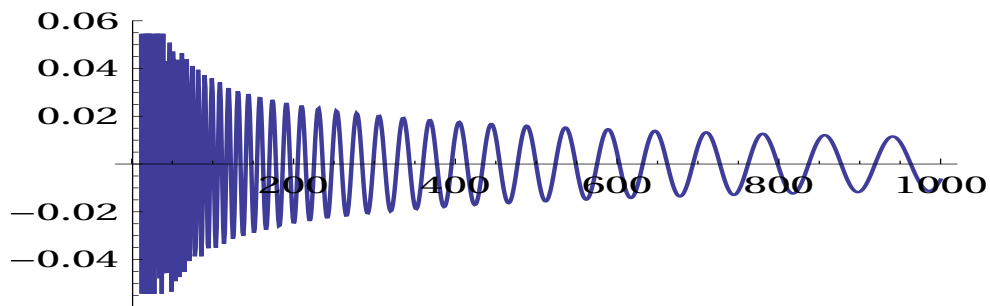


[10000]=0.0185272576419921730650  
 [100000]=0.0180575446703839549711  
 [1000000]=0.0175087936290795401217  
 [10000000]=0.0178615209629044355277  
 [100000000]=0.0177201662173655516419  
 It does not converge to 0.

(67.0798 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(67.0798) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(67.0798) \ln(2n)]}{(2n)^{0.5}} \right] \quad (55)$$

= -0.0065237542293612301177290343425925....

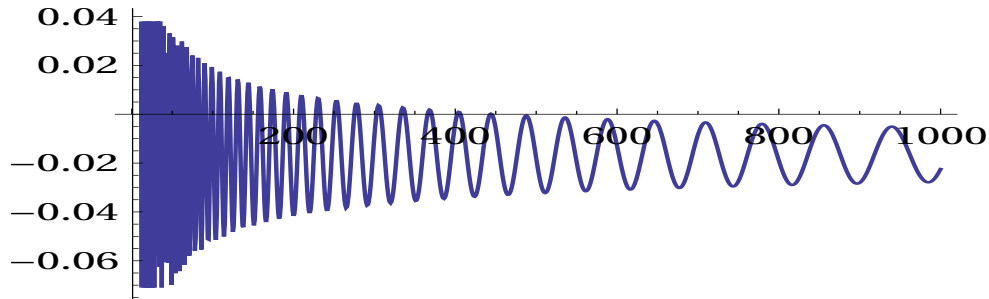


[10000]=0.0004455620242284032877  
 [100000]=0.0004495504034751115607  
 [1000000]=-0.0002621111366443582480  
 [10000000]=0.0001288477260946204589  
 [100000000]=-0.0000147163868139592400  
 converge to 0.

(67.0798 +0.01=67.0898)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(67.0898) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(67.0898) \ln(2n)]}{(2n)^{0.5}} \right] \quad (56)$$

= -0.022435645618969822822622562110867639....

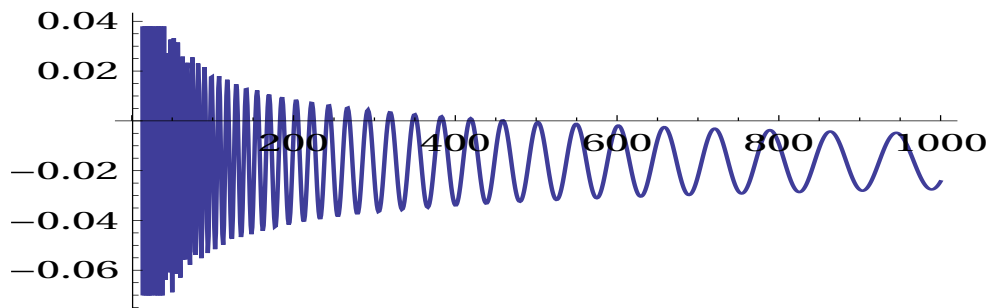


[10000]=-0.0165228379532093849758  
 [100000]=-0.0160473792921948035795  
 [1000000]=-0.0169096431198623928238  
 [10000000]=-0.0164894634928593915302  
 [100000000]=-0.0166309192179651989252  
 It does not converge to 0.

(69.5464 -0.01= 69.5364)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(69.5364) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(69.5364) \ln(2n)]}{(2n)^{0.5}} \right] \quad (57)$$

= -0.0243297577962054059566184331757303259....

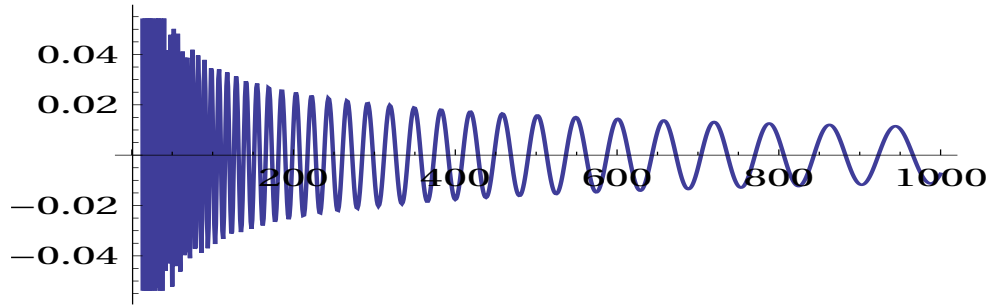


[10000]=-0.0134734792416161801992  
 [100000]=-0.0172578985580090112084  
 [1000000]=-0.0159753770631393052226  
 [10000000]=-0.0164030485920629576224  
 [100000000]=-0.0162623947872419447047  
 It does not converge to 0.

(69.5464 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(69.5464) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(69.5464) \ln(2n)]}{(2n)^{0.5}} \right] \quad (58)$$

= -0.00742194981868251334108790488075153....

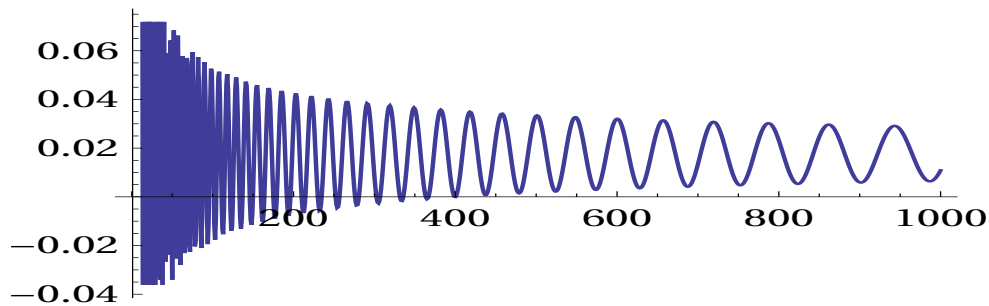


[10000]=0.0025963455525007681293  
 [100000]=-0.0008871211367050240836  
 [1000000]=0.0002940474711544655657  
 [10000000]=-0.0001016062203650079822  
 [100000000]=0.0000296025170157569742  
 converge to 0.

(69.5464 +0.01=69.5564)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(69.5564) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(69.5564) \ln(2n)]}{(2n)^{0.5}} \right] \quad (59)$$

= 0.010867804829161603203853104882137222....

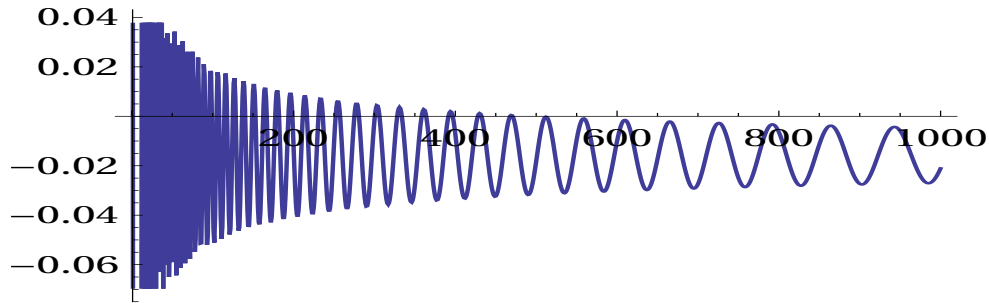


[10000]=0.0199797996968321539546  
 [100000]=0.0168359155842571633910  
 [1000000]=0.0178963339534679265197  
 [10000000]=0.0175417209470739889066  
 [100000000]=0.0176595177076413131778  
 It does not converge to 0.

(72.0672 - 0.01 = 72.0572)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(72.0572) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(72.0572) \ln(2n)]}{(2n)^{0.5}} \right] \quad (60)$$

= -0.0210743033551647014364941401522796....



[10000] = -0.0126713775327911490343

[100000] = -0.0169220760051842292193

[1000000] = -0.0155397673872098192327

[10000000] = -0.0158425049243976420743

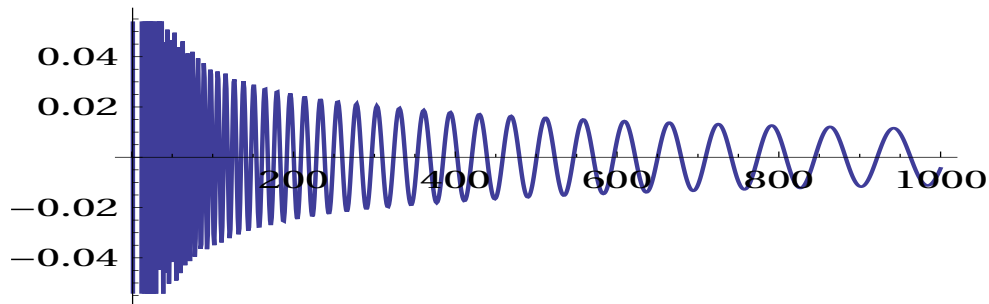
[100000000] = -0.0158212729604979597531

It does not converge to 0.

(72.0672 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(72.0672) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(72.0672) \ln(2n)]}{(2n)^{0.5}} \right] \quad (61)$$

= -0.004433077941905571139525695057394011....



[10000] = 0.0030294285324277098019

[100000] = -0.0010518535189544097729

[1000000] = 0.0003671456814411551135

[10000000] = 0.0000169455603833922448

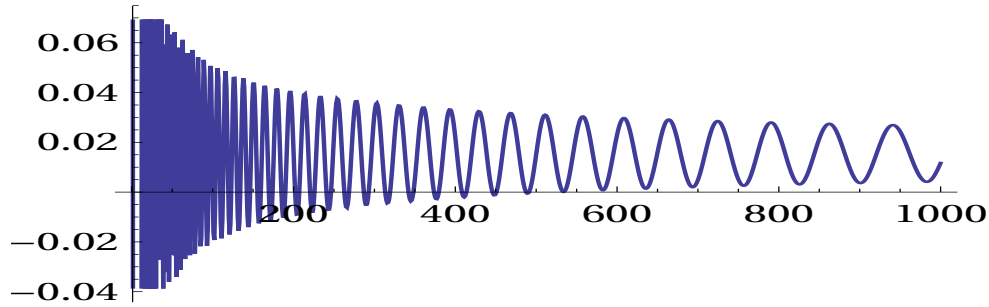
[100000000] = 0.0000622802048020602324

converge to 0.

(72.0672 +0.01=72.0772)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(72.0672) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(72.0672) \ln(2n)]}{(2n)^{0.5}} \right] \quad (62)$$

= 0.01170363676792169905229332806333232....

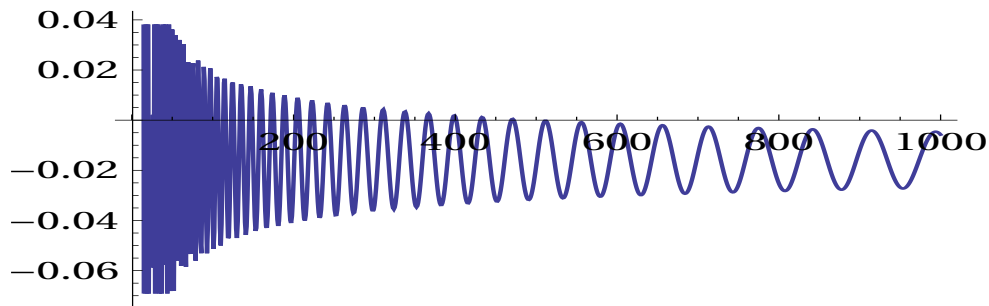


[10000]=0.0181707007646028824432  
 [100000]=0.0143045111219020221194  
 [1000000]=0.0157372394547144987820  
 [10000000]=0.0153472886281138462539  
 [100000000]=0.0154154791762151199136  
 It does not converge to 0.

(75.7047 -0.01=75.6947)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(75.6947) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(75.6947) \ln(2n)]}{(2n)^{0.5}} \right] \quad (63)$$

= -0.005767602040275194888056795583206626735159....

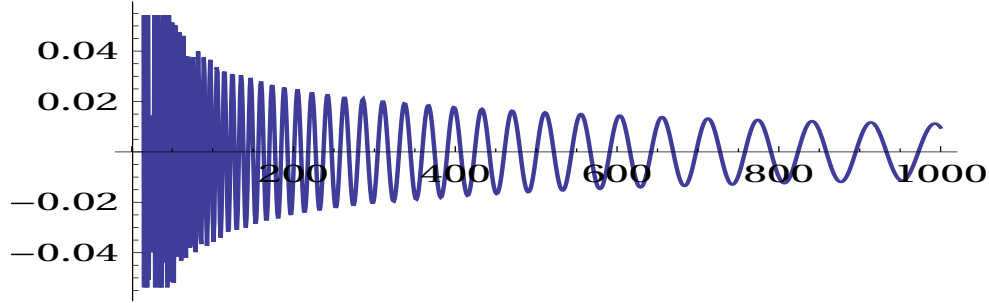


[10000]=-0.0145183117659648756176  
 [100000]=-0.0168743137361940659380  
 [1000000]=-0.0158932270594019514620  
 [10000000]=-0.0156984831255221751745  
 [100000000]=-0.0158045871196352515076  
 It does not converge to 0.

(75.7047 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(75.7047) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(75.7047) \ln(2n)]}{(2n)^{0.5}} \right] \quad (64)$$

= 0.00965362801211004223122426163063638....

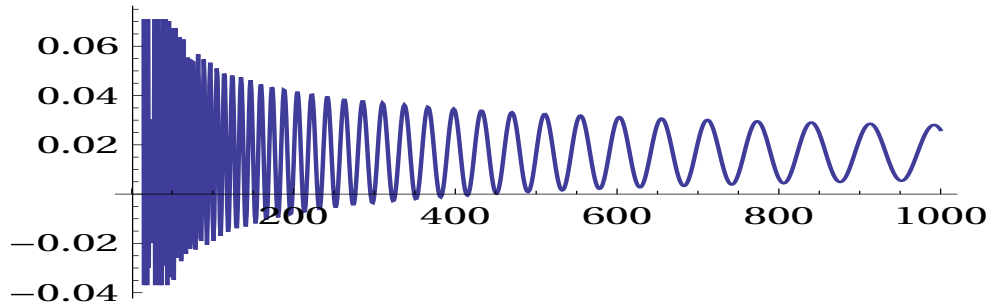


[10000]=0.0016245600108993024473  
 [100000]=-0.0010015153125604158314  
 [1000000]=-0.0001182290513657512342  
 [10000000]=0.0001204084346666212352  
 [100000000]=0.0000257517189773427849  
 converge to 0.

(75.7047 +0.01=75.7147)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(75.7147) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(75.7147) \ln(2n)]}{(2n)^{0.5}} \right] \quad (65)$$

= 0.02603757915450419183152249404869049....

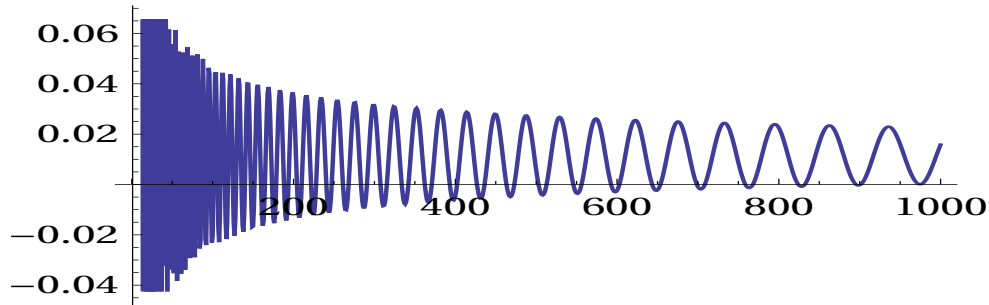


[10000]=0.0187700429043501960946  
 [100000]=0.0159047949088703503839  
 [1000000]=0.0166779554338473551267  
 [10000000]=0.0169547162854766578222  
 [100000000]=0.0168740888732249530446  
 It does not converge to 0.

(77.1448 -0.01=77.1348)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(77.1348) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(77.1348) \ln(2n)]}{(2n)^{0.5}} \right] \quad (66)$$

= 0.01583745539074428146647286370734127500....

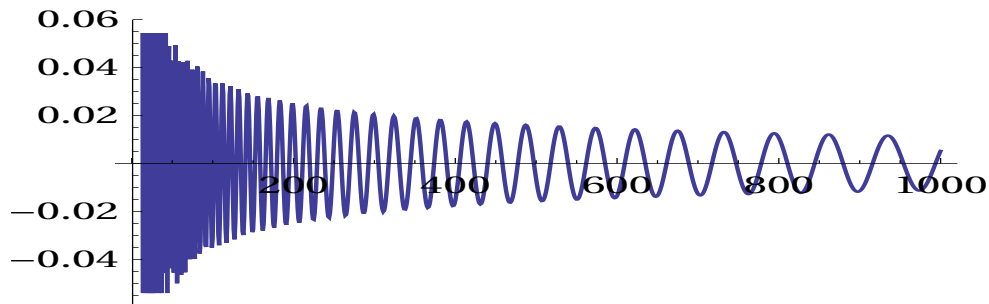


[10000]=0.0145234041256118440177  
 [100000]=0.0107811168707620391727  
 [1000000]=0.0111512206798152439108  
 [10000000]=0.0115001989383124846728  
 [100000000]=0.0114390960849727763710  
 It does not converge to 0.

(77.1448 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(77.1448) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(77.1448) \ln(2n)]}{(2n)^{0.5}} \right] \quad (67)$$

= 0.005230027651272115755657184376504....

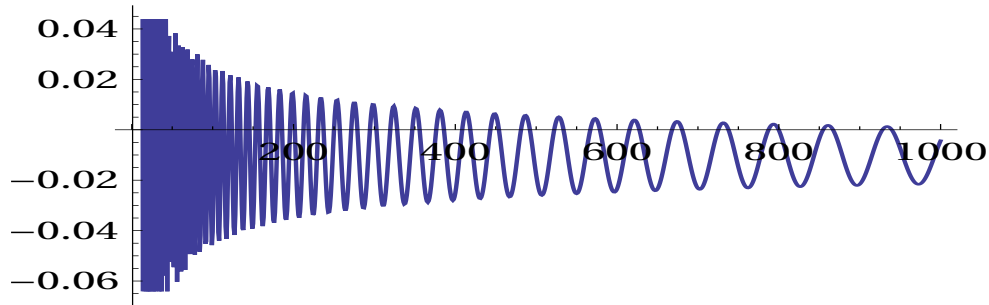


[10000]=0.0029664779953020377519  
 [100000]=-0.0007006166354271297931  
 [1000000]=-0.0001870419726466966779  
 [10000000]=0.0001371403920681105127  
 [100000000]=0.0000587154729794121019  
 converge to 0.

(77.1448 +0.01=77.1548)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(77.1548) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(77.1548) \ln(2n)]}{(2n)^{0.5}} \right] \quad (68)$$

= -0.0043608609812712112493907874542557....



[10000]=-0.0075726021271640304999

[100000]=-0.0111247864798120002505

[1000000]=-0.0104739693260100571320

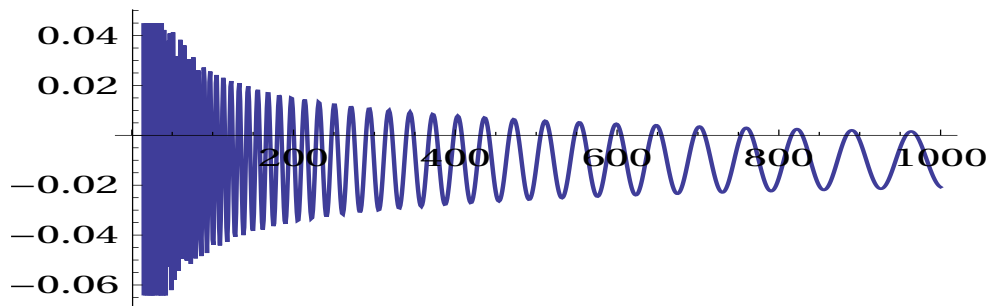
[10000000]=-0.0101820675996653637468

It does not converge to 0.

(79.3374 -0.01=79.3274)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(79.3274) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(79.3274) \ln(2n)]}{(2n)^{0.5}} \right] \quad (69)$$

= -0.02076513152075744354907712109053746....



[10000]=0.0081757550311770624957

[100000]=0.0107178805140204780333

[1000000]=0.0113446414910911078100

[10000000]=0.0114396706861565559260

[100000000]=0.0114299609176478494943

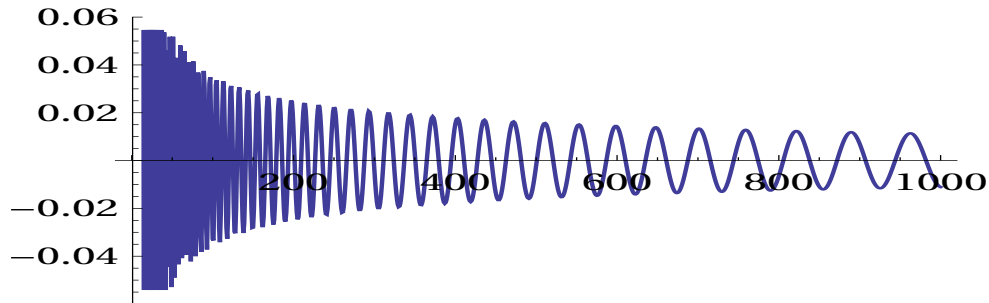
It does not converge to 0.



(79.3374 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(79.3374) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(79.3374) \ln(2n)]}{(2n)^{0.5}} \right] \quad (70)$$

= -0.01106011860300484314739118389904421....

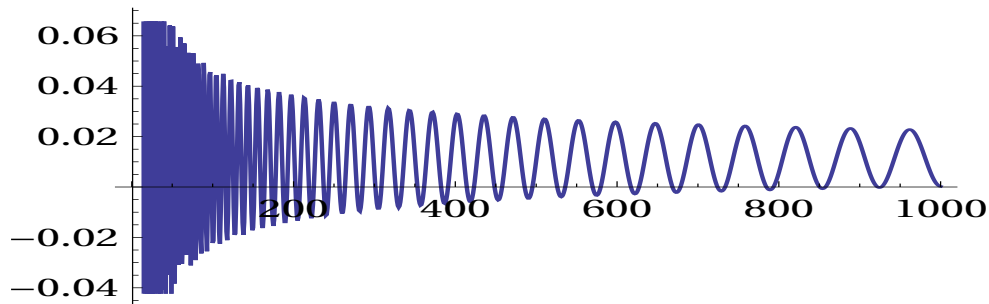


[10000]=-0.0033286483613430535924  
 [100000]=-0.0007622145135349513156  
 [1000000]=-0.0000828611800183551403  
 [10000000]=0.0000436829234382010275  
 [100000000]=0.0000471368163292867377  
 converge to 0.

(79.3374 +0.01=79.3474)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(79.3474) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(79.3474) \ln(2n)]}{(2n)^{0.5}} \right] \quad (71)$$

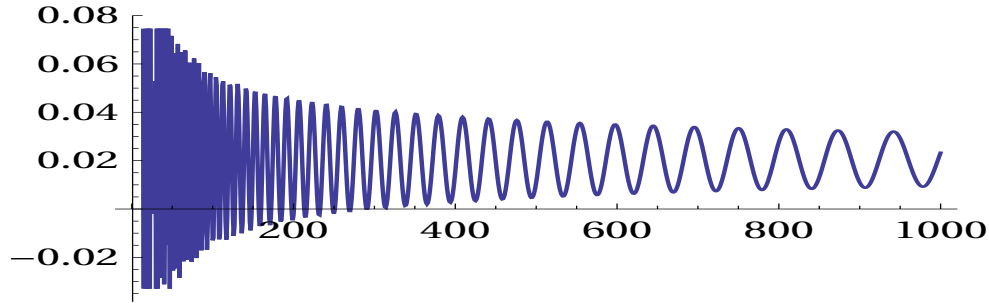
= 0.0002394727927926906226549451014682763....



[10000]=0.0081757550311770624957  
 [100000]=0.0107178805140204780333  
 [1000000]=0.0113446414910911078100  
 [10000000]=0.0114396706861565559260  
 [100000000]=0.0114299609176478494943  
 It does not converge to 0.

$$(82.9104 - 0.01 = 82.9004) \sum_{n=1}^{1000} \left[ \frac{\cos[(82.9004) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(82.9004) \ln(2n)]}{(2n)^{0.5}} \right] \quad (72)$$

= 0.023282073861962337559387459755070270....

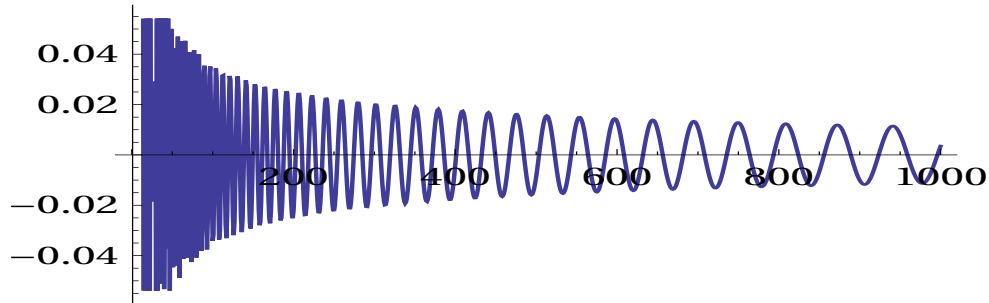


[10000]=0.0222846263592452326074  
 [100000]=0.0194543229123889487020  
 [1000000]=0.0208411982389801672677  
 [10000000]=0.0204842003462149778448  
 [100000000]=0.0205104126644407684654  
 It does not converge to 0.

(82.9104 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(82.9104) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(82.9104) \ln(2n)]}{(2n)^{0.5}} \right] \quad (73)$$

= 0.00353445588698973299308904117790351....

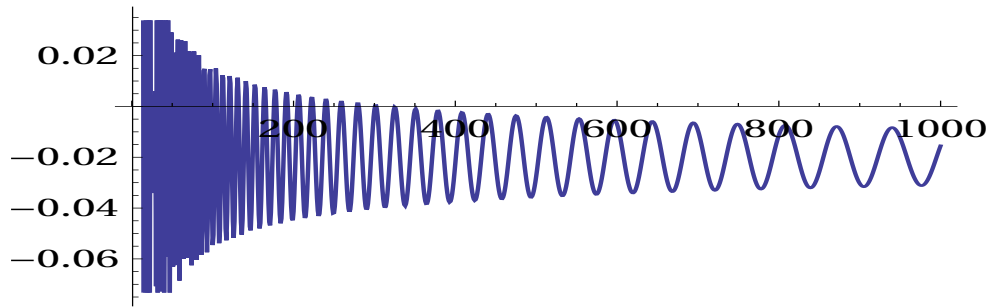


[10000]=0.0014103623601796036642  
 [100000]=-0.0010605598122671972775  
 [1000000]=0.0002978867961682382442  
 [10000000]=-0.0000952393762674968021  
 [100000000]=-0.0000456358162302138902  
 converge to 0.

(82.9104 +0.01=82.9204)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(82.9204) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(82.9204) \ln(2n)]}{(2n)^{0.5}} \right] \quad (74)$$

= -0.0154899634910662258389046813497956....



[10000]=-0.0187342688547805988342

[100000]=-0.0208164032433105182507

[1000000]=-0.0195086635481445599960

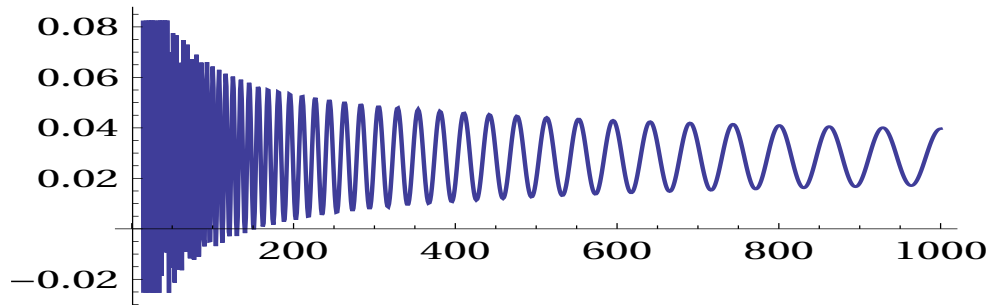
[10000000]=-0.0199292508559919707978

It does not converge to 0.

(84.7355 -0.01=84.7255)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(84.7255) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(84.7255) \ln(2n)]}{(2n)^{0.5}} \right] \quad (75)$$

= 0.0396645733911028256955546774667570504....



[10000]=0.0318872204225595853866

[100000]=0.0294184557494009089884

[1000000]=0.0287067629290724581070

[10000000]=0.0285249567043578157455

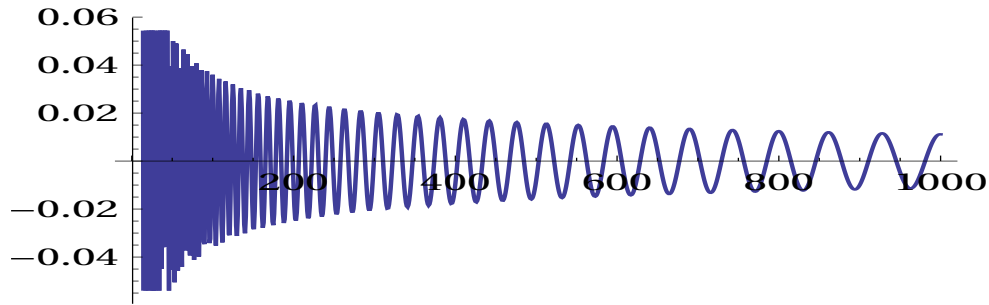
[100000000]=0.0284865943793785082738

It does not converge to 0.

(84.7355 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(84.7355) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(84.7355) \ln(2n)]}{(2n)^{0.5}} \right] \quad (76)$$

= 0.01114105160265642993787875398772657....

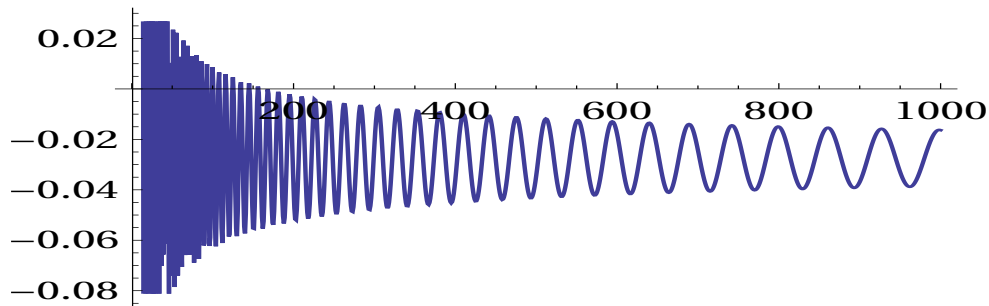


[10000]=0.0032716683727916544625  
 [100000]=0.0008326779381843932206  
 [1000000]=0.0001606701190157385807  
 [10000000]=0.0000029354452761063156  
 [100000000]=-0.0000241664658097951197  
 converge to 0.

(84.7355 +0.01=84.7455)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(84.7455) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(84.7455) \ln(2n)]}{(2n)^{0.5}} \right] \quad (77)$$

= -0.01634507197229332832488362753685614....

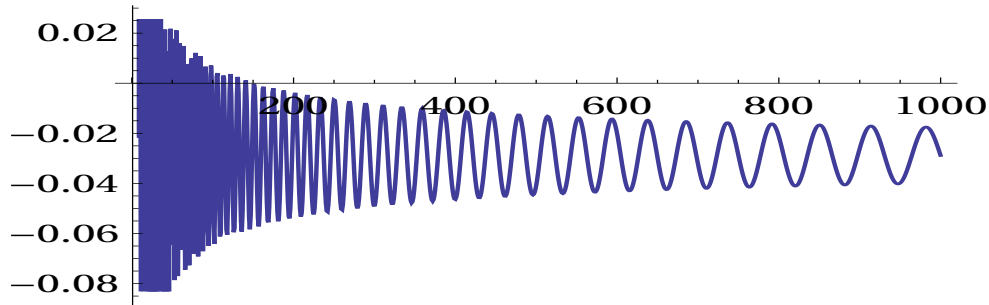


[10000]=-0.0242742873721646205964  
 [100000]=-0.0266639316485210234320  
 [1000000]=-0.0272873605024068974223  
 [10000000]=-0.0274178711569532593262  
 [100000000]=-0.0274329111587670940176  
 It does not converge to 0.

(87.4253 -0.01=87.4153)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(87.4153) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(87.4153) \ln(2n)]}{(2n)^{0.5}} \right] \quad (78)$$

= -0.028868238867705496470309995403830767....



[10000]=-0.0294905492735248811464

[100000]=-0.0292174614920240223459

[1000000]=-0.0289672758022459127247

[10000000]=-0.0288395349215854295000

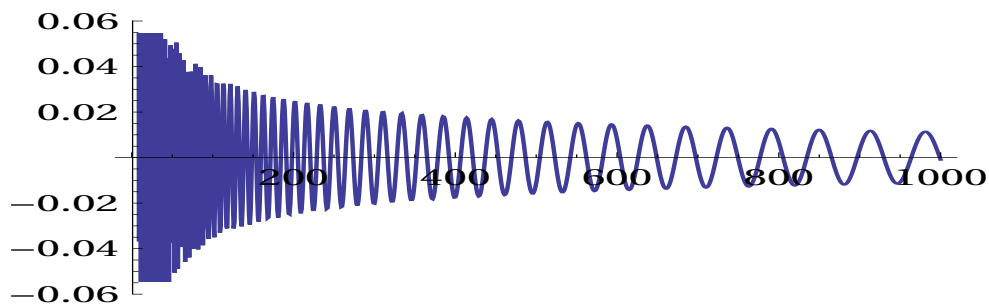
[100000000]=-0.0287856788587947144686

It does not converge to 0.

(87.4253 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(87.4253) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(87.4253) \ln(2n)]}{(2n)^{0.5}} \right] \quad (79)$$

= -0.0008885814873853968282314147822626937....



[10000]= -0.0010004497393000491741

[100000]= -0.0005095242227744967893

[1000000]= -0.0001774559399960536792

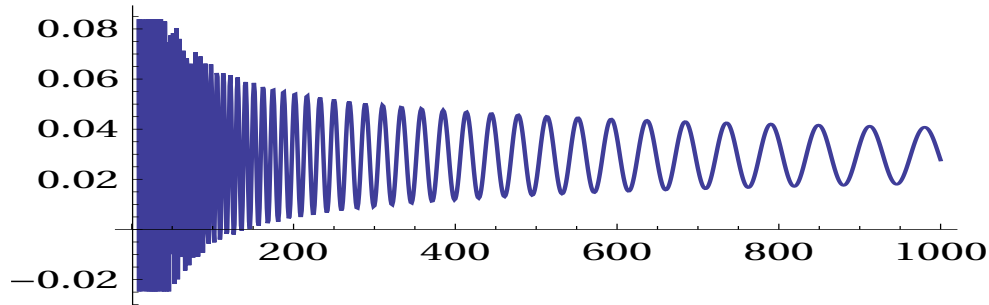
[10000000]= -0.0000220674631672737237

converge to 0.

(87.4253 +0.01=87.4353)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(87.4353) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(87.4353) \ln(2n)]}{(2n)^{0.5}} \right] \quad (80)$$

= 0.02770447484589880891303818419140328....

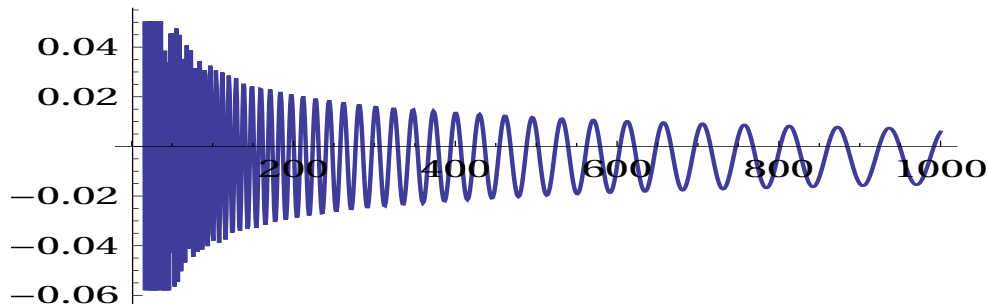


[10000]=0.0281080194080228738807  
 [100000]=0.0288149360292453242394  
 [1000000]=0.0292254876163264634692  
 [10000000]=0.0294059482673889455162  
 [100000000]=0.0294750496713673745819  
 It does not converge to 0.

(88.8091 -0.01=88.7991)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(88.7991) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(88.7991) \ln(2n)]}{(2n)^{0.5}} \right] \quad (81)$$

= 0.00585253027583306986688681062022843....

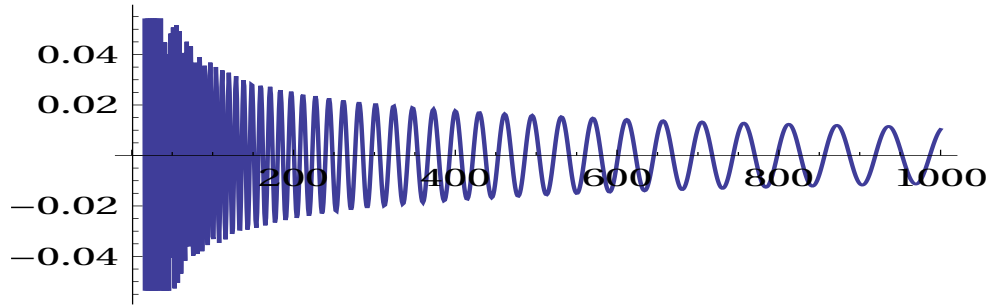


[10000]=-0.0075802629627276293250  
 [100000]=-0.0030150819828270061622  
 [1000000]=-0.0044697337538711374300  
 [10000000]=-0.0040379390189374331568  
 [100000000]=-0.0041561060838526033695  
 It does not converge to 0.

(88.8091 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(88.8091) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(88.8091) \ln(2n)]}{(2n)^{0.5}} \right] \quad (82)$$

= 0.0103328970781082668980115307749628....

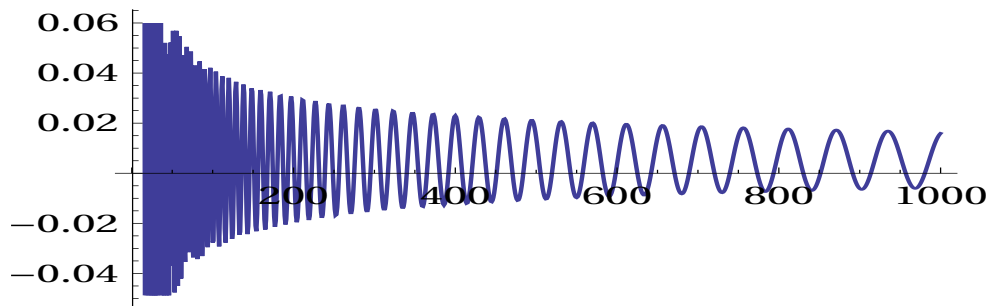


[10000]= -0.0035136809338557582760  
 [100000]= 0.0010982711272328137507  
 [1000000]= -0.0003239705664555260706  
 [10000000]= 0.0000776637060144497345  
 [100000000]= -0.0000237365082598473473  
 converge to 0.

(88.8091 +0.01=88.8191)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(88.8191) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(88.8191) \ln(2n)]}{(2n)^{0.5}} \right] \quad (83)$$

= 0.01593493283752298348725610077429899....

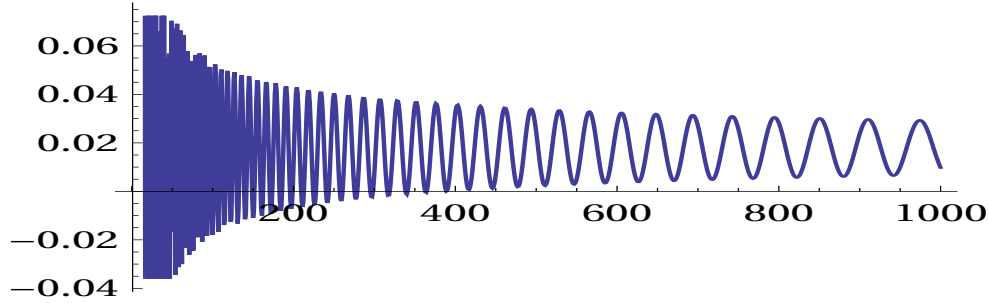


[10000]=0.0017686547806949515400  
 [100000]=0.0063765745429264107311  
 [1000000]=0.0050098608074647396973  
 [10000000]=0.0053722992267073851544  
 [100000000]=0.0052906766583897986422  
 It does not converge to 0.

(92.4919 - 0.01 = 92.4819)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(92.4819) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(92.4819) \ln(2n)]}{(2n)^{0.5}} \right] \quad (84)$$

= 0.0098019674300467981702972710862591060....

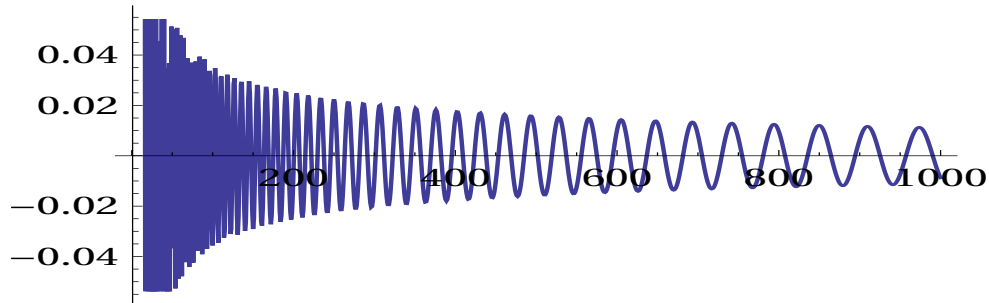


[10000]=0.0175727899371627450942  
 [100000]=0.0185962823074991082106  
 [1000000]=0.0183356254448237623866  
 [10000000]=0.0181058644958792085145  
 [100000000]=0.0180190368161497645183  
 It does not converge to 0.

(92.4919 is nontrivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(92.4919) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(92.4919) \ln(2n)]}{(2n)^{0.5}} \right] \quad (85)$$

0.008547365010250874501406981302547....



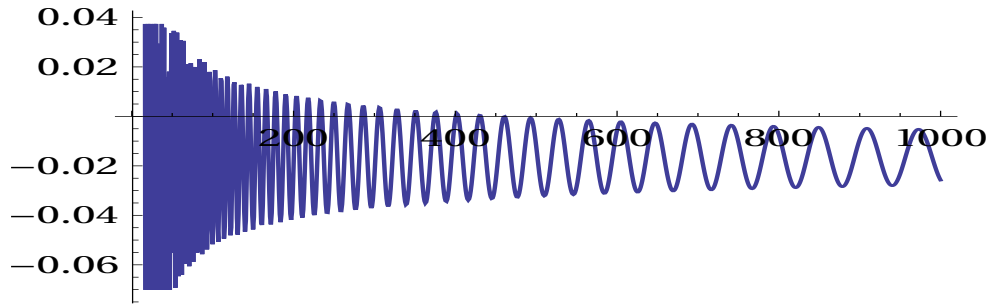
[10000]= -0.0007743076968254169329  
 [100000]= 0.0004744262043307513350  
 [1000000]= 0.0003134308227507082872  
 [10000000]= 0.0001086453122232273349  
 [100000000]= 0.0000222759238317110844  
 converge to 0.



(92.4919 +0.01=92.5019 )

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(92.5019) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(92.5019) \ln(2n)]}{(2n)^{0.5}} \right] \quad (86)$$

= -0.025769922882814007897222100511552408....



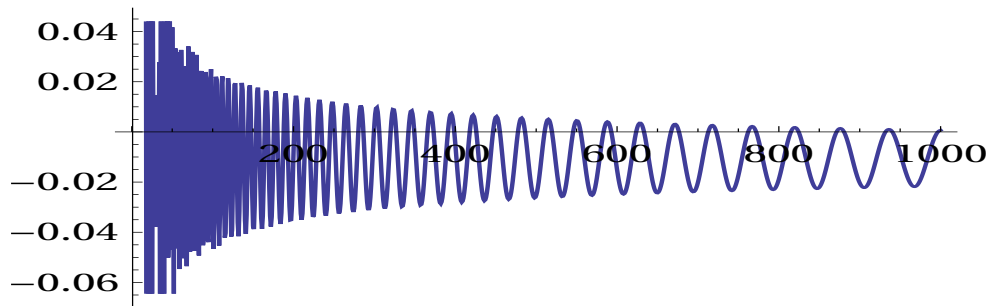
[10000]=-0.0176244246733206419431  
 [100000]=-0.0161651034310129684823  
 [1000000]=-0.0162259716204928086669  
 [10000000]=-0.0164022678319018025417  
 [100000000]=-0.0164859373527452453264

It does not converge to 0.

(The axis is 94.6513 -0.01=94.6413)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(94.6413) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(94.6413) \ln(2n)]}{(2n)^{0.5}} \right] \quad (87)$$

= 0.000660819168786540468218909859131396....



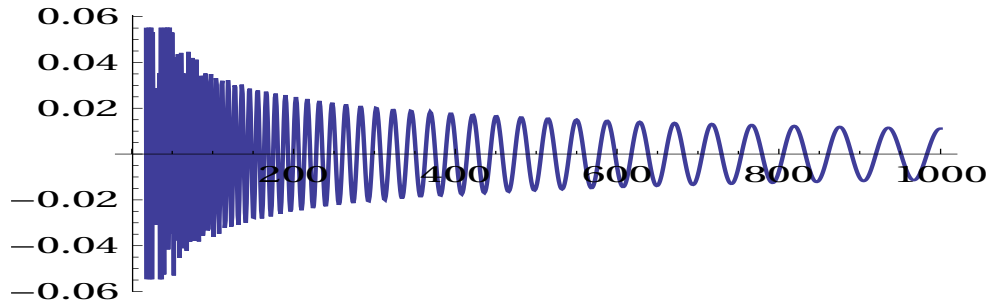
[10000]=-0.0121569785214179423849  
 [100000]=-0.0112000894592297842861  
 [1000000]=-0.0101682718652411838156  
 [10000000]=-0.0105313846942306915677  
 [100000000]=-0.0105406836417775116865

It does not converge to 0.

(94.6513 is nontrivial zero value as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(94.6513) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(94.6513) \ln(2n)]}{(2n)^{0.5}} \right] \quad (88)$$

= 0.011127005476330245290336596568709....

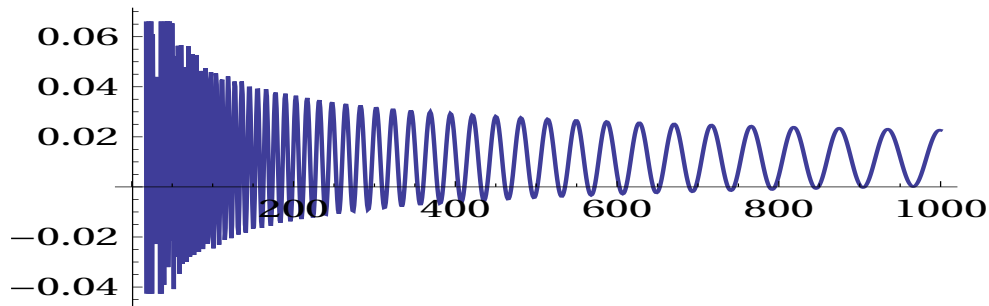


[10000]= -0.0013765254567662944633  
 [100000]= -0.0008392212363509909913  
 [1000000]= 0.0002788508501267524431  
 [10000000]= -0.0000497038044914837129  
 [100000000]= -0.0000309521760194209424  
 converge to 0.

(4.6513 +0.01=94.6613)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(94.6613) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(94.6613) \ln(2n)]}{(2n)^{0.5}} \right] \quad (89)$$

= 0.0226177350640789660336991357925295....

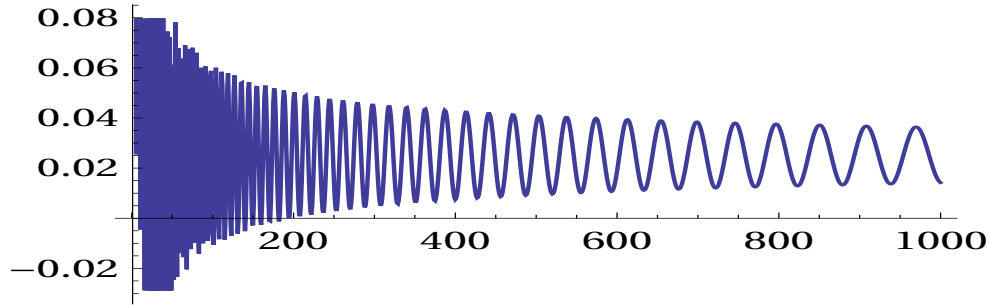


[10000]=0.0105060236444533584843  
 [100000]=0.0106224946041767430438  
 [1000000]=0.0118081762350637931719  
 [10000000]=0.0115210923270080024122  
 [100000000]=0.0114690425146854717980  
 not converge

(95.8706 -0.01=95.8606)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(95.8606) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(95.8606) \ln(2n)]}{(2n)^{0.5}} \right] \quad (90)$$

= 0.0141726314708569701042096332852576....

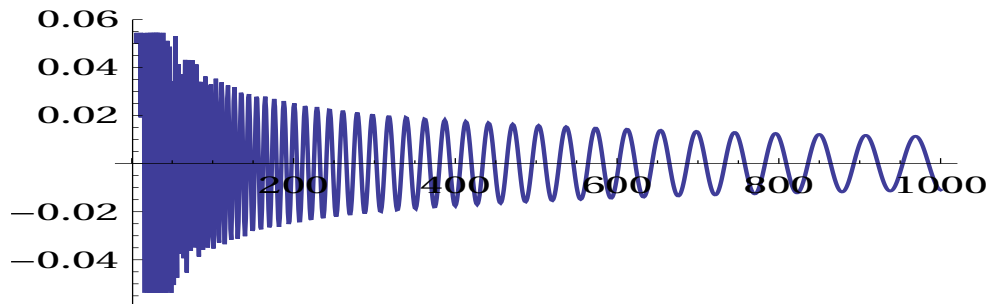


[10000]=0.0222087165335923750198  
 [100000]=0.0249554363954456182029  
 [1000000]=0.0253503637991626534776  
 [10000000]=0.0252465303669947294107  
 [100000000]=0.0251620072925927106000  
 It does not converge to 0.

(95.8706 non-trivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(95.8706) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(95.8706) \ln(2n)]}{(2n)^{0.5}} \right] \quad (91)$$

= -0.011014033824321856717273464621484....

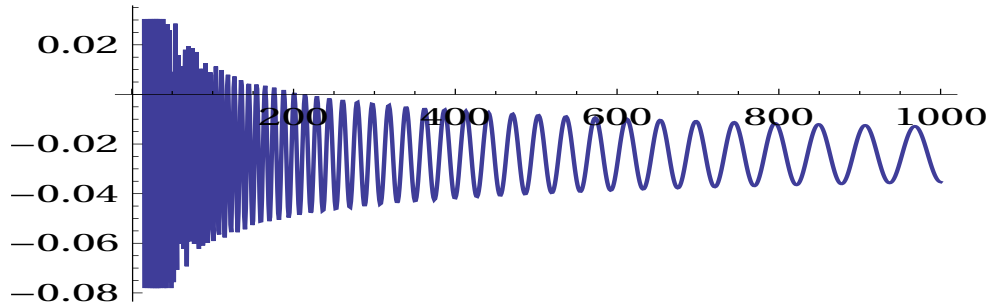


[10000]= -0.0026317155444329789170  
 [100000]= 0.0000402283252831486376  
 [1000000]= 0.0003377731160845019081  
 [10000000]= 0.0001959498109393056735  
 [100000000]= 0.0001062174084937451399  
 converge to 0.

(95.8706 +0.01=95.8806)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(95.8806) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(95.8806) \ln(2n)]}{(2n)^{0.5}} \right] \quad (92)$$

= -0.0353349835789649803594929182725300....



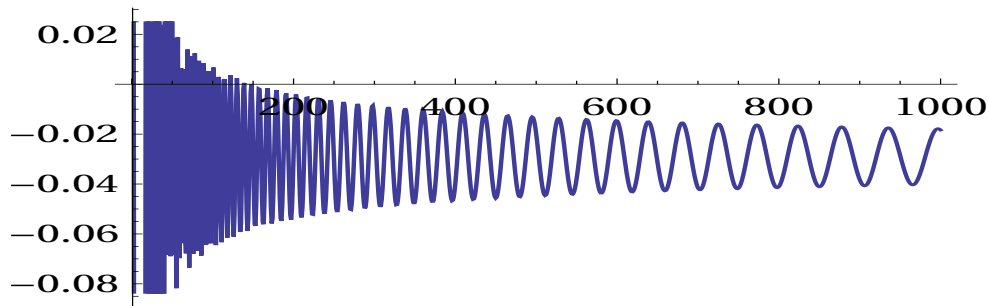
[10000]=-0.0266439074358246347218  
 [100000]=-0.0240727000624901266157  
 [1000000]=-0.0238785193788296559725  
 [10000000]=-0.0240561535769304446486  
 [100000000]=-0.0241487448061668240340

It does not converge to 0.

(98.8312 -0.01=98.8212)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(98.8212) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[(98.8212) \ln(2n)]}{(2n)^{0.5}} \right] \quad (93)$$

= -0.01836716410892171545340072825816205....



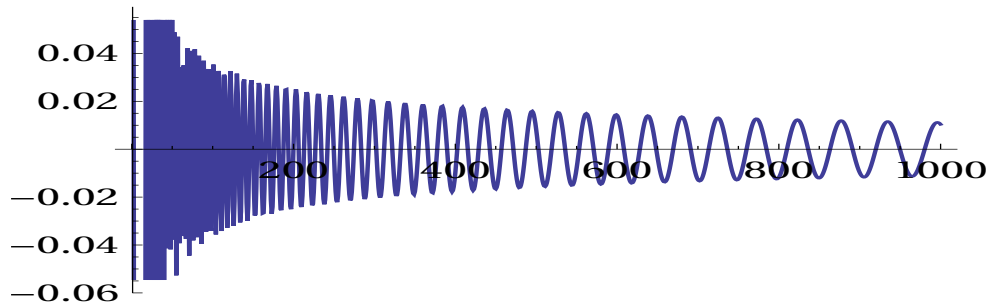
[10000]=-0.0292518955508751753170  
 [100000]=-0.0301065407422408601312  
 [1000000]=-0.0291306835944684996975  
 [10000000]=-0.0289089284578080280008  
 [100000000]=-0.0289757311462570422977

It does not converge to 0.

(98.8312 non-trivial zero value. as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(98.8312) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(98.8312) \ln(2n)]}{(2n)^{0.5}} \right] \quad (94)$$

= 0.01035763665582629861002788662670953735774....

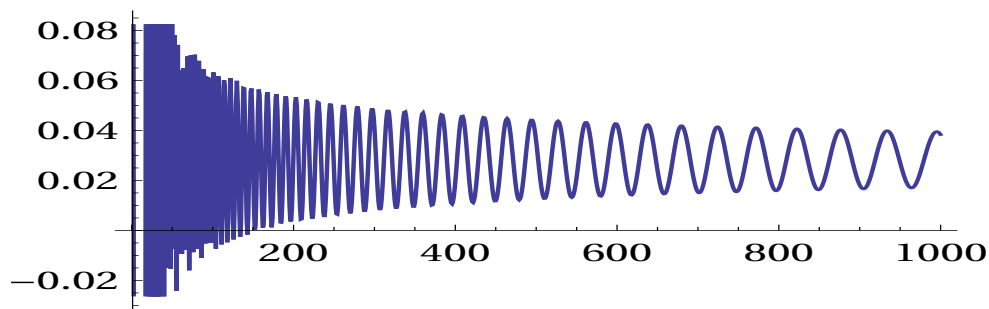


[10000]=-0.0005812758455654100289  
 [100000]=-0.0011009283190770852157  
 [1000000]=-0.0000636630925465695460  
 [10000000]=0.0001183386232722523221  
 [100000000]=0.0000372821209876205499  
 converge to 0.

(98.8312 +0.01=98.8412)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(98.8412) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(98.8412) \ln(2n)]}{(2n)^{0.5}} \right] \quad (95)$$

= 0.038336463236695226503961208870407837....

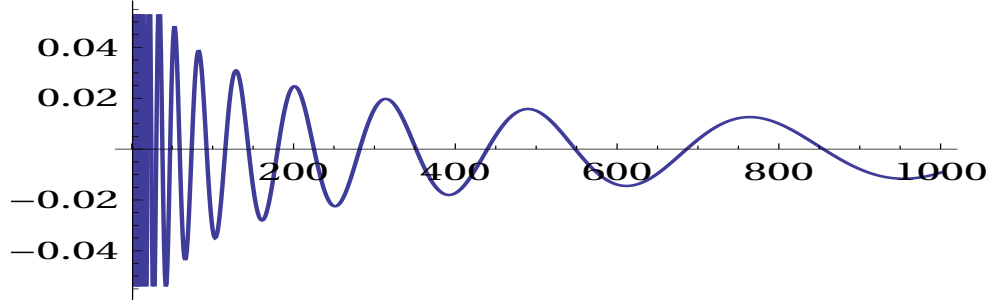


[10000]=0.0274089479801120014524  
 [100000]=0.0272350581913820416480  
 [1000000]=0.0283187887816494579529  
 [10000000]=0.0284564818222056009622  
 [100000000]=0.0283632866205242029078  
 It does not converge to 0.

## Chapter 2 (The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n-1)]}{(2n-1)^{0.4999}} - \frac{\cos[(14.1347) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (96)$$

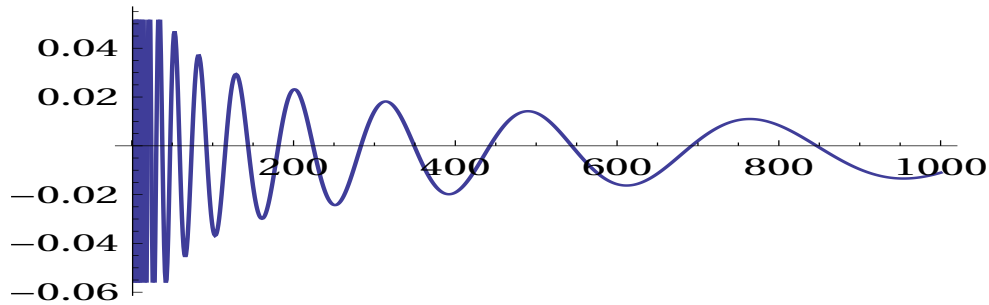
= -0.009257840509601691345415572118652270020349....



[10000] = 0.0004507987473490796242  
 [100000] = 0.0008914259539826629910  
 [1000000] = 0.0000369560416503415042  
 [10000000] = -0.0002376640949813201248  
 It does not converge to 0.

$$(Theaxisis0.5 - 0.001) \sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n-1)]}{(2n-1)^{0.499}} - \frac{\cos[(14.1347) \ln(2n)]}{(2n)^{0.499}} \right] \quad (97)$$

= -0.01101289662827007626840667504580326470803....

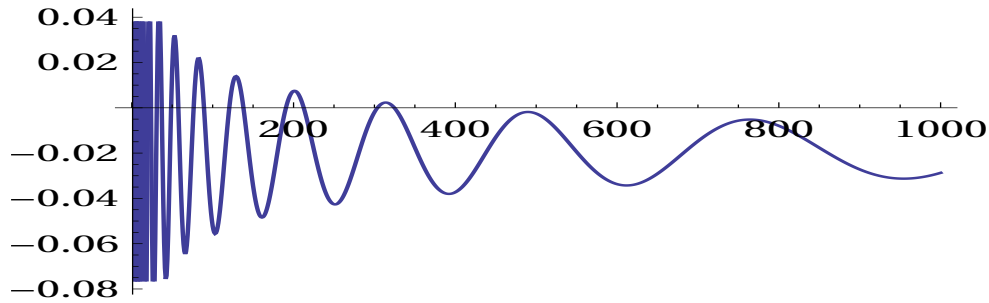


[10000] = -0.0012362724913637813257  
 [100000] = -0.0007894351938749065867  
 [1000000] = -0.0016528658873606642214  
 [10000000] = -0.0019311939413460994797  
 It does not converge to 0.

(The axis is 0.5 -0.01)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n - 1)]}{(2n - 1)^{0.49}} - \frac{\cos[14.1347 \ln(2n)]}{(2n)^{0.49}} \right] \quad (98)$$

= -0.0287246146425618261....

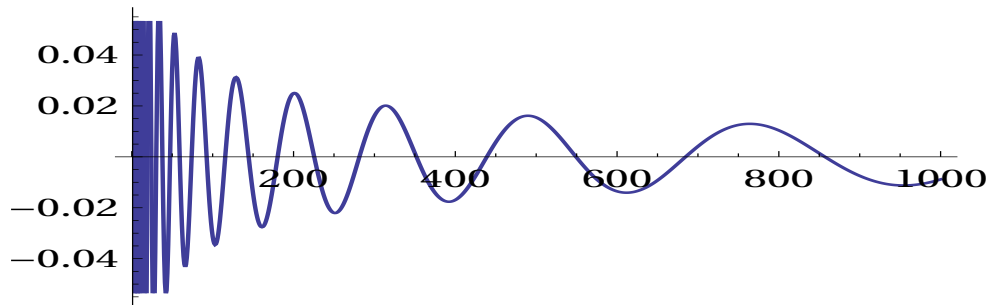


[10000]= -0.0182412463962976847953  
 [100000]= -0.0177277053736920320315  
 [1000000]= -0.0186860009565473737803  
 [10000000]= -0.0190042870176894175549  
 [100000000]= -0.0189917517130979707218  
 It does not converge to 0.

(The axis is 0.5 as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n - 1)]}{(2n - 1)^{0.5}} - \frac{\cos[14.1347 \ln(2n)]}{(2n)^{0.5}} \right] \quad (99)$$

-0.00906301367133582151....

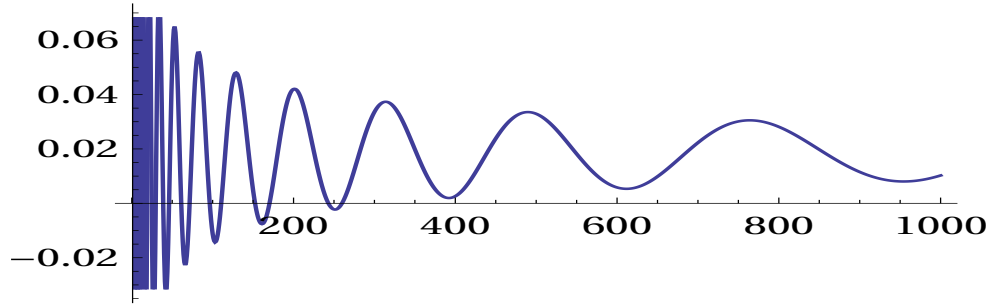


[10000]=0.0006381011115495365026  
 [100000]=0.0010780432416684295090  
 [1000000]=0.0002245632899122298001  
 [10000000]=-0.0000496479275200912434  
 [100000000]=-0.0000382288508812898928  
 converge to 0.

(The axis is 0.5 +0.01)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n - 1)]}{(2n - 1)^{0.51}} - \frac{\cos[14.1347 \ln(2n)]}{(2n)^{0.51}} \right] \quad (100)$$

= 0.01024008264902787325....

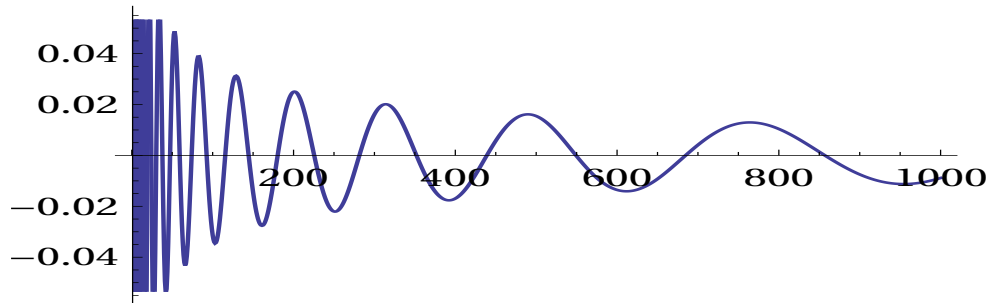


[10000]=0.0192176082247373404555  
 [100000]=0.0195937840748259088641  
 [1000000]=0.0188337913412248876555  
 [10000000]=0.0185975339572469408611  
 [100000000]=0.0186078662584906844024  
 It does not converge to 0.

(The axis is 0.5 +0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(14.1347) \ln(2n - 1)]}{(2n - 1)^{0.5001}} - \frac{\cos[(14.1347) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (101)$$

= -0.008868222680406964769889406332068608994503



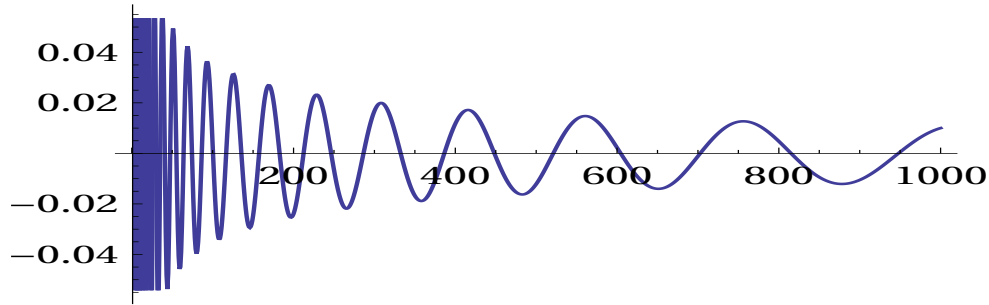
[10000] =0.0008253734918036038232  
 [100000] =0.0012646315271827121996  
 [1000000] =0.0004121404043212865422  
 [10000000] =0.0001383374951391049966  
 [100000000] =0.0001497455169634955138  
 It does not converge to 0.



(The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n - 1)]}{(2n - 1)^{0.4999}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (102)$$

= 0.01000193209323910616719482024600681797053

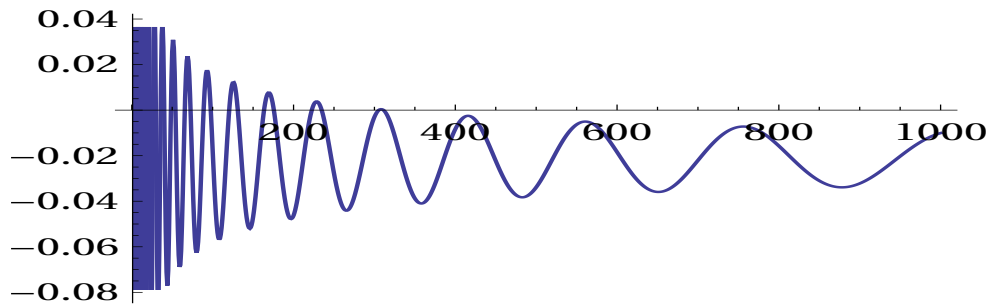


[10000]= -0.0025130531442483245580  
 [100000]= -0.0007592596129060642015  
 [1000000]= 0.0001734116036285227871  
 [10000000]= -0.0001707549672368732893  
 [100000000]= -0.0002018563265390039933  
 It does not converge to 0.

(The axis is 0.5 -0.01)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n - 1)]}{(2n - 1)^{0.49}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.49}} \right] \quad (103)$$

= -0.010077623957692851438

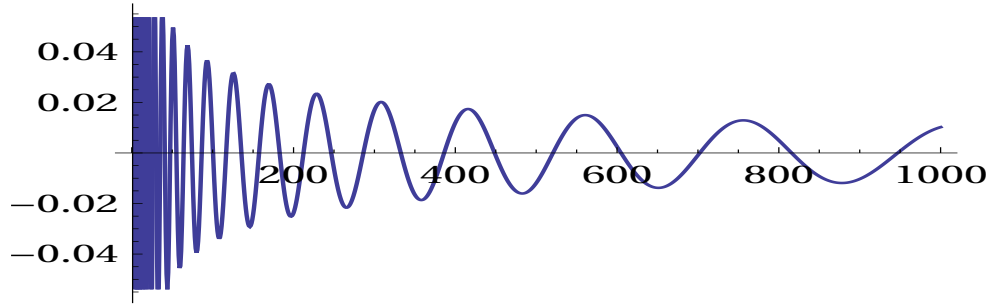


[10000]=-0.0236290071420571581862  
 [100000]=-0.0217095847284566982605  
 [1000000]=-0.0206482298290876220559  
 [10000000]=-0.0210456267984390245351  
 [100000000]=-0.0210832778695941719382  
 It does not converge to 0.

(The axis is 0.5 as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.5}} \right] \quad (104)$$

= 0.010203050972979707

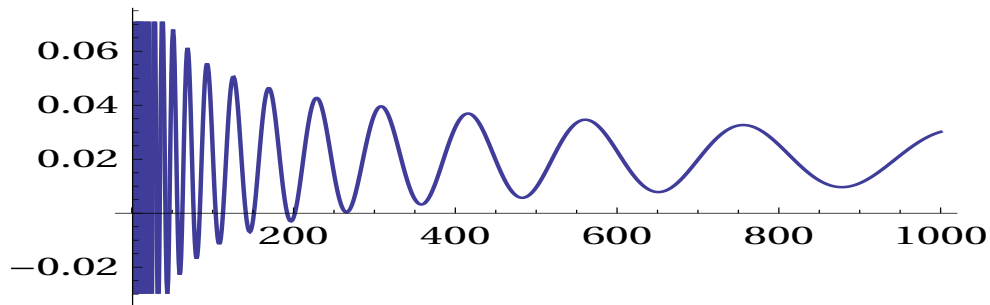


[10000]=-0.0023018856406172511289  
 [100000]=-0.0005496921657573621087  
 [1000000]=0.0003817627764431225329  
 [10000000]=0.0000380957809653702473  
 [100000000]=0.0000070544092957442871  
 converge to 0.

(The axis is 0.5 +0.01)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.51}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.51}} \right] \quad (105)$$

= 0.0301437250660519783

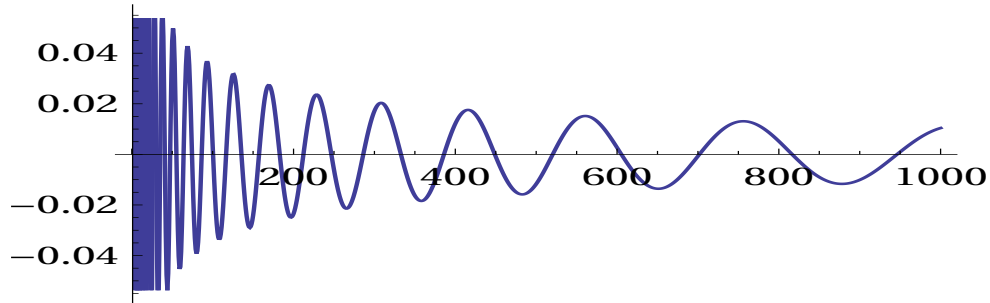


[10000]=0.0186034964827524601505  
 [100000]=0.0202026487431074264212  
 [1000000]=0.0210202028664549234183  
 [10000000]=0.0207230001134234807780  
 [100000000]=0.0206974093289953205155  
 It does not converge to 0.

(The axis is 0.5 +0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.5001}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (106)$$

$$= 0.01040413585093161542948171527344683833200$$

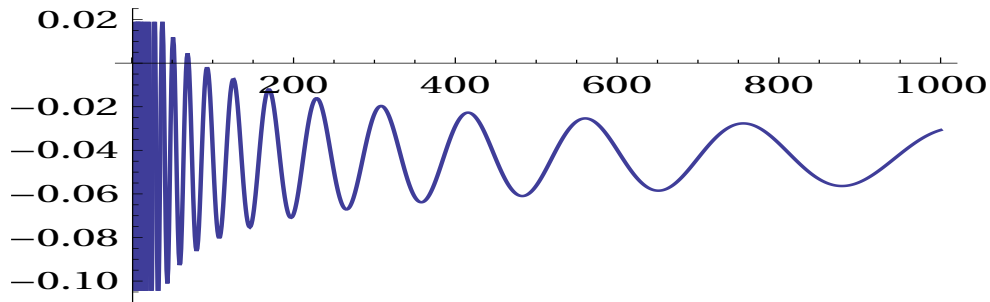


[10000]= -0.0020907603079233774354  
 [100000]= -0.0003401654715591180544  
 [1000000]= 0.0005900747938683002011  
 [10000000]= 0.0002469066484824651792  
 [100000000]= 0.0002159251488904244615  
 It does not converge to 0.

(The axis is 0.5 -0.02)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.48}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.48}} \right] \quad (107)$$

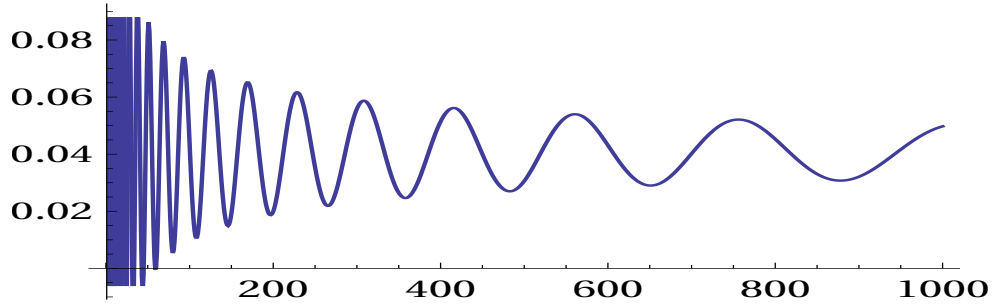
$$= -0.03070111267169493669615238336936340134803$$



(The axis is 0.5 +0.02)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.52}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.52}} \right] \quad (108)$$

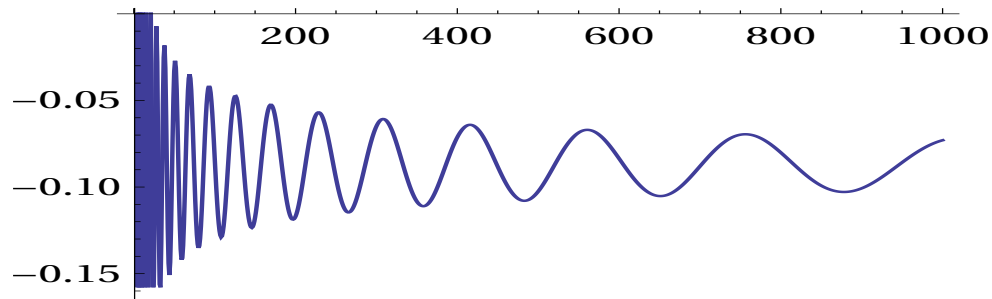
$$= 0.01040413585093161542948171527344683833200$$



(The axis is 0.5 -0.04)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.46}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.46}} \right] \quad (109)$$

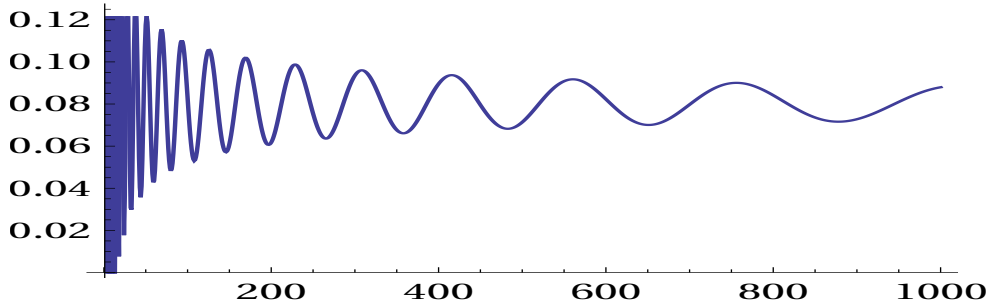
$$= -0.07298661059381196497204117045350103709776$$



(The axis is 0.5 +0.04)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.54}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.54}} \right] \quad (110)$$

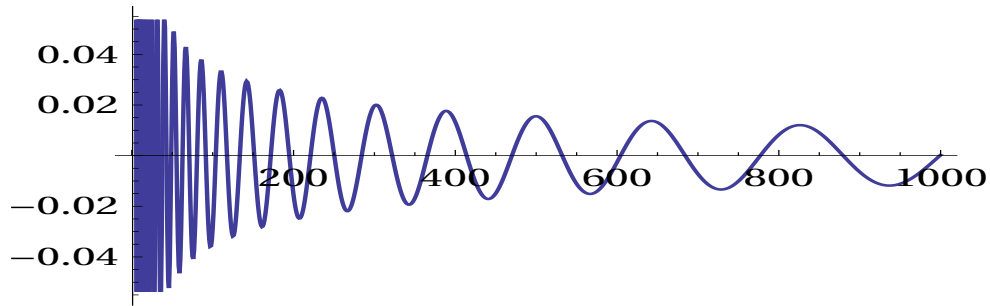
$$= 0.08795681187328022067573686113169838407802$$



(The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0108) \ln(2n-1)]}{(2n-1)^{0.4999}} - \frac{\cos[(25.0108) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (111)$$

$$= 0.0002340683951231753530213741769410219031263$$



$$[10000] = 0.0028566554290930883629$$

$$[100000] = 0.0006906044201284139818$$

$$[1000000] = -0.0002709625732176824389$$

$$[10000000] = -0.0003618649905174442603$$

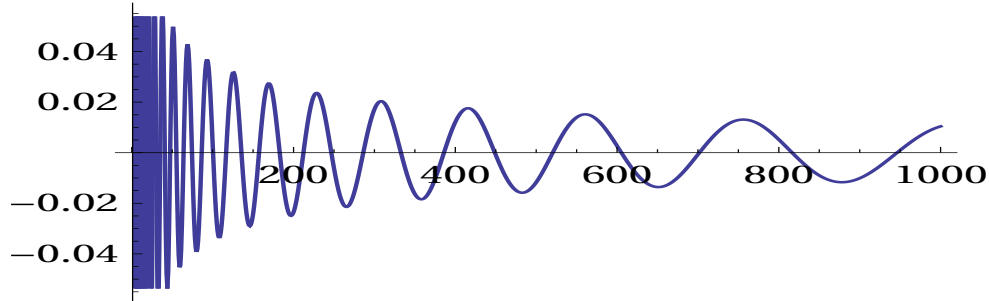
$$[100000000] = -0.0002947302460572199471$$

It does not converge to 0.

(The axis is 0.5 as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0108) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(25.0108) \ln(2n)]}{(2n)^{0.5}} \right] \quad (112)$$

$$= 0.000416329417915032594395358125814297943316$$



$$[10000] = 0.0030362058419032560315$$

$$[100000] = 0.0008720793230033872714$$

$$[1000000] = -0.0000883131280091895720$$

$$[10000000] = -0.0001790612933318289318$$

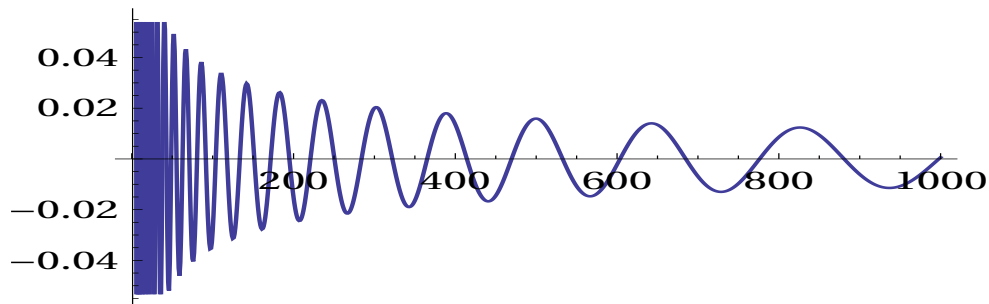
$$[100000000] = -0.0001120322912827072107$$

converge to 0.

(The axis is 0.5 + 0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0108) \ln(2n-1)]}{(2n-1)^{0.5001}} - \frac{\cos[(25.0108) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (113)$$

$$= 0.0005985544783954206970746192803864414197669$$



$$[10000] = 0.0032157230626145682367$$

$$[100000] = 0.0010535193966828991421$$

$$[1000000] = 0.0000943000529583720780$$

$$[10000000] = 0.0000037058782494527016$$

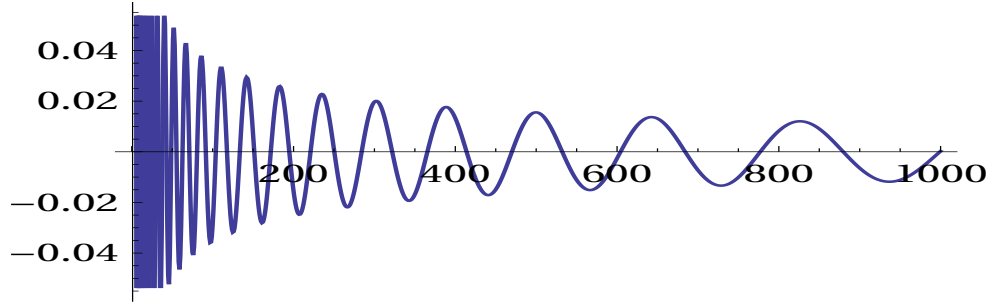
$$[100000000] = 0.0000706293020917810922$$

not converge

(The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0108) \ln(2n-1)]}{(2n-1)^{0.4999}} - \frac{\cos[(25.0108) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (114)$$

$$= 0.0002340683951231753530213741769410219031263$$

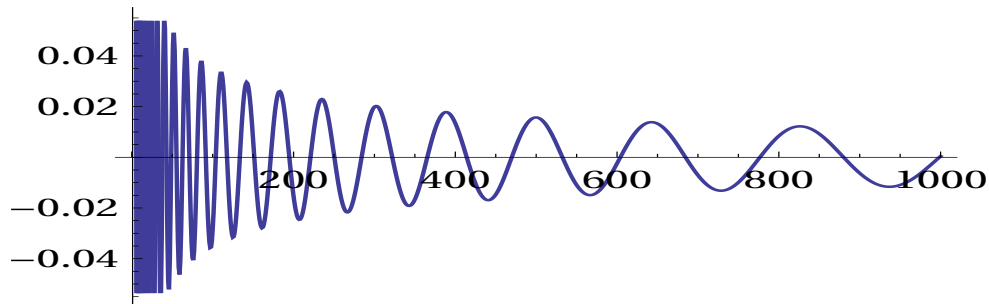


[10000]= 0.0028566554290930883629  
 [100000]= 0.0006906044201284139818  
 [1000000]= -0.0002709625732176824389  
 [10000000]= -0.0003618649905174442603  
 [100000000]= -0.0002947302460572199471  
 It does not converge to 0.

(The axis is 0.5 as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0108) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(25.0108) \ln(2n)]}{(2n)^{0.5}} \right] \quad (115)$$

$$= 0.0005985544783954206970746192803864414197669$$

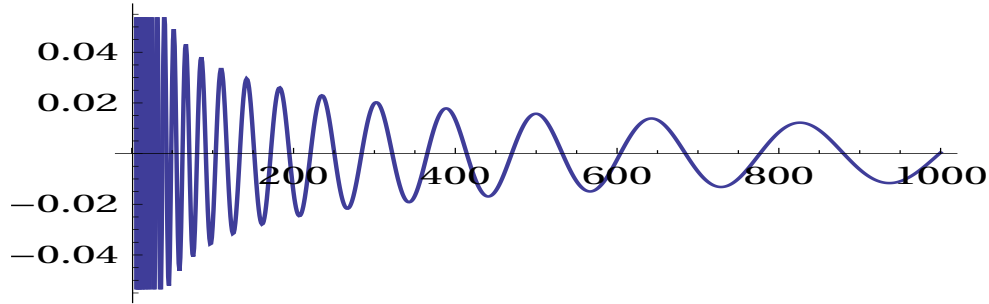


[10000]= 0.0030362058419032560315  
 [100000]= 0.0008720793230033872714  
 [1000000]= -0.0000883131280091895720  
 [10000000]= -0.0001790612933318289318  
 [100000000]= -0.0001120322912827072107  
 converge

(The axis is 0.5 +0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(25.0108) \ln(2n-1)]}{(2n-1)^{0.5001}} - \frac{\cos[(25.0108) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (116)$$

$$= 0.0005985544783954206970746192803864414197669$$

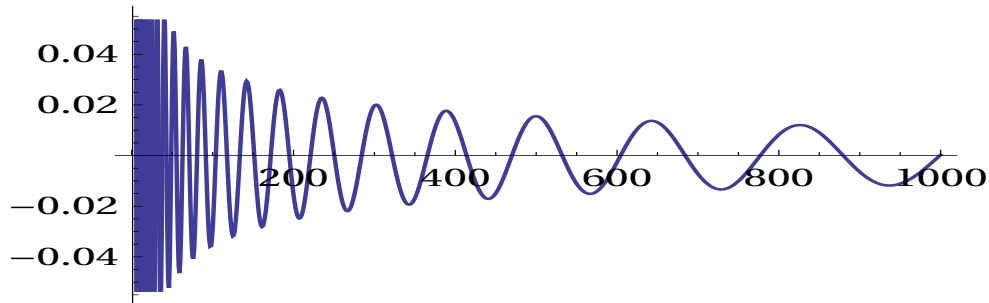


[10000]= 0.0032157230626145682367  
 [100000]= 0.0010535193966828991421  
 [1000000]= 0.0000943000529583720780  
 [10000000]= 0.0000037058782494527016  
 [100000000]=0.0000706293020917810922  
 It does not converge to 0.

(The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(30.4249) \ln(2n-1)]}{(2n-1)^{0.4999}} - \frac{\cos[(30.4249) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (117)$$

$$= -0.003621872781749893703241471240183001932850$$



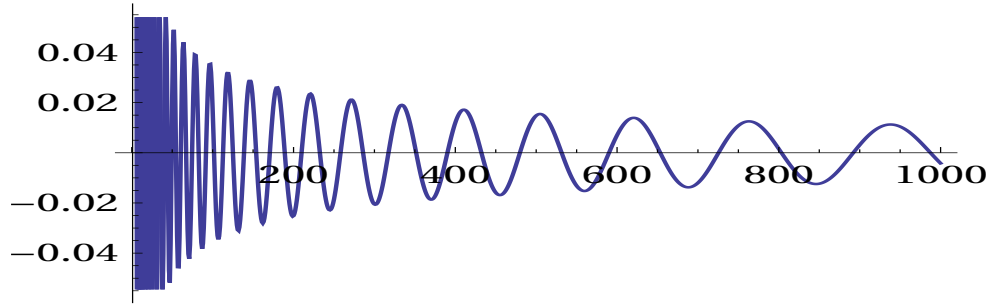
[10000]= -0.0036857273183505895667  
 [100000]= -0.0011679318936974449148  
 [1000000]= -0.0002732164013939200088  
 [10000000]= -0.0001916048617219040962  
 [100000000]=-0.0002507092585473904211  
 It does not converge to 0.



(The axis is 0.5 +0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(30.4249) \ln(2n-1)]}{(2n-1)^{0.5001}} - \frac{\cos[(30.4249) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (118)$$

$$= -0.004196378625761797127850868428917737781222$$

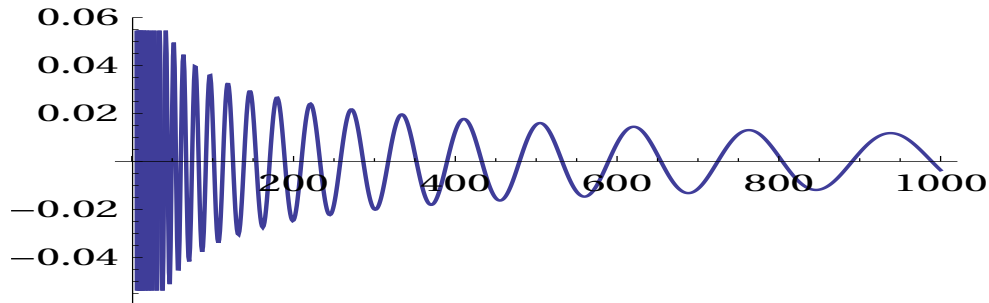


[10000]= -0.0031104335665254672846  
 [100000]= -0.0005972140862021245314  
 [1000000]= 0.0002953148853648278642  
 [10000000]= 0.0003766474981249263716  
 [100000000]=0.0003177261764005903698  
 It does not converge to 0.

(The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(32.9351) \ln(2n-1)]}{(2n-1)^{0.4999}} - \frac{\cos[(32.9351) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (119)$$

$$= -0.006520873872352604350683258279120869089259$$

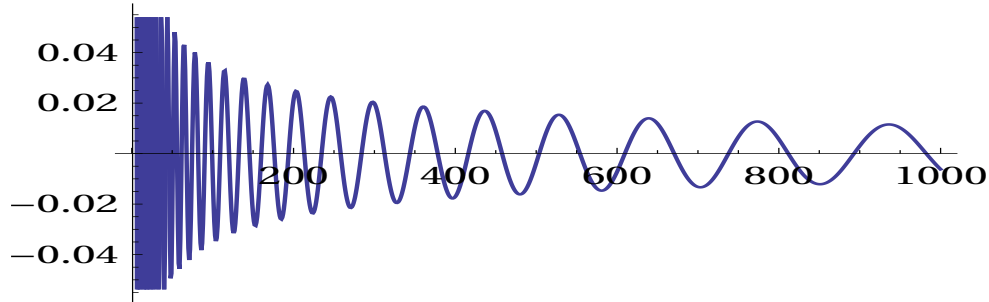


[10000]= -0.0033265870155339848958  
 [100000]= -0.0014259997537920011002  
 [1000000]= -0.0006499340047967802842  
 [10000000]= -0.0003952687549852392001  
 [100000000]= -0.0003269916339072487417  
 It does not converge to 0.

(The axis is 0.5 as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(32.9351) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(32.9351) \ln(2n)]}{(2n)^{0.5}} \right] \quad (120)$$

$$= -0.006211350232338428548135531520246292646547$$



$$[10000] = -0.0030187974933814079245$$

$$[100000] = -0.0011198358022496601640$$

$$[1000000] = -0.0003446395140902848734$$

$$[10000000] = -0.0000903248133043883523$$

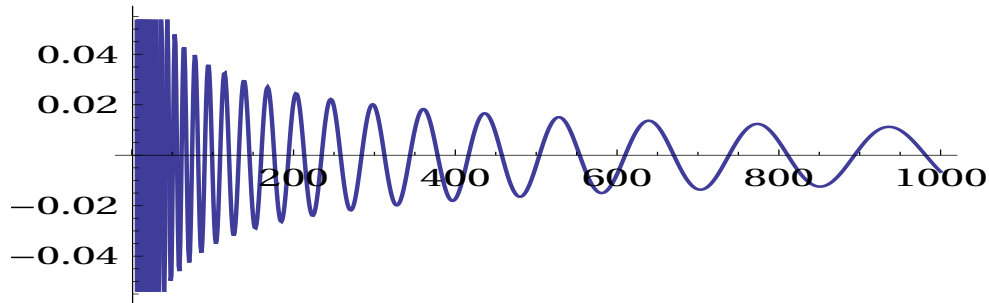
$$[100000000] = -0.0000221594074273025880$$

converge to 0.

(The axis is 0.5 + 0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(32.9351) \ln(2n-1)]}{(2n-1)^{0.5001}} - \frac{\cos[(32.9351) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (121)$$

$$= -0.005901905538729304253398373095610640138367$$



$$[10000] = -0.0027110862859639232522$$

$$[100000] = -0.0008137488683290382187$$

$$[1000000] = -0.0000394210923560222855$$

$$[10000000] = 0.0002145435362777440636$$

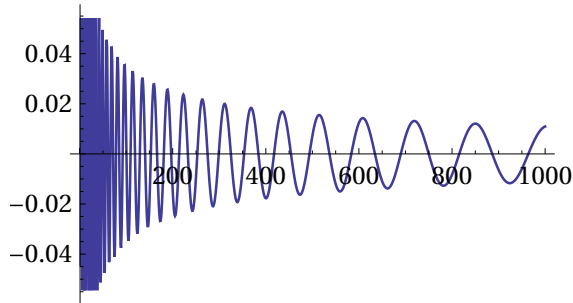
$$[100000000] = 0.0002825974089321377095$$

It does not converge to 0.

(The axis is 0.5 -0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(37.5862) \ln(2n-1)]}{(2n-1)^{0.4999}} - \frac{\cos[(37.5862) \ln(2n)]}{(2n)^{0.4999}} \right] \quad (122)$$

= 0.01086045647842345848663450544439839131658....



[10000]= -0.0002867678530919621984

[100000]= -0.0012464273837236416586

[1000000]= -0.0002241654742639324536

[10000000]= -0.0000308032050931214237

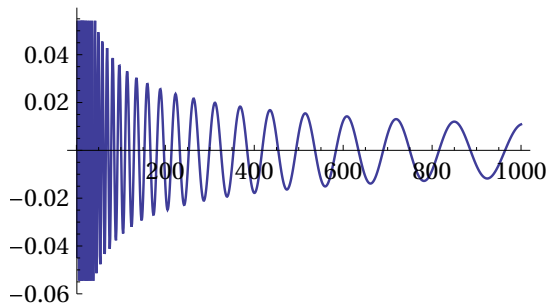
[100000000]= -0.0001146022572867225783

It does not converge to 0.

(The axis is 0.5 as it is.)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(37.5862) \ln(2n-1)]}{(2n-1)^{0.5}} - \frac{\cos[(37.5862) \ln(2n)]}{(2n)^{0.5}} \right] \quad (123)$$

= 0.01094179539026480827799190174599114281438....

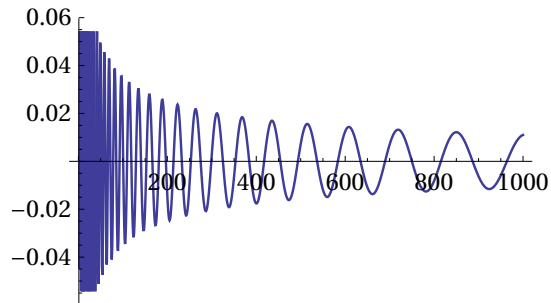


[10000]= -0.0001969237257829878525  
 [100000]= -0.0011553773481789157869  
 [1000000]= -0.0001343416061451328184  
 [10000000]= 0.0000587167172489908842  
 [100000000]= -0.0000249459169129748873  
 converge to 0.

(The axis is  $0.5 + 0.0001$ )

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(37.5862) \ln(2n-1)]}{(2n-1)^{0.5001}} - \frac{\cos[(37.5862) \ln(2n)]}{(2n)^{0.5001}} \right] \quad (124)$$

= 0.01102313386504823888442448029869892963767....



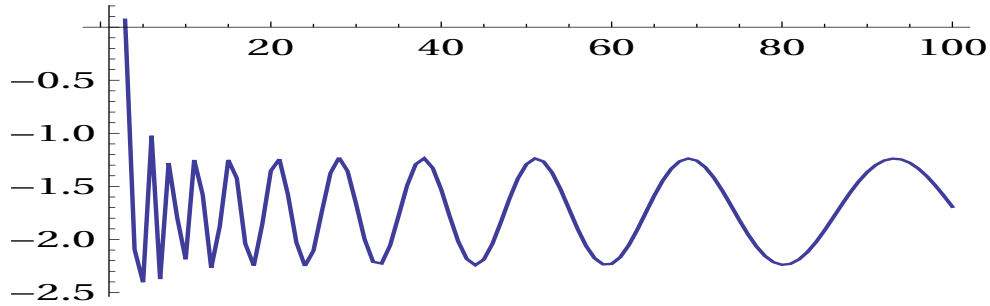
[10000]= -0.0001070865329218817518  
 [100000]= -0.0010643357530222712949  
 [1000000]= -0.0000445247128895299153  
 [10000000]= 0.0001482301450447530726  
 [100000000]= 0.0000647037088475878962

### Chapter 3

(The axis is 0.00001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.00001}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.00001}} \right] \quad (125)$$

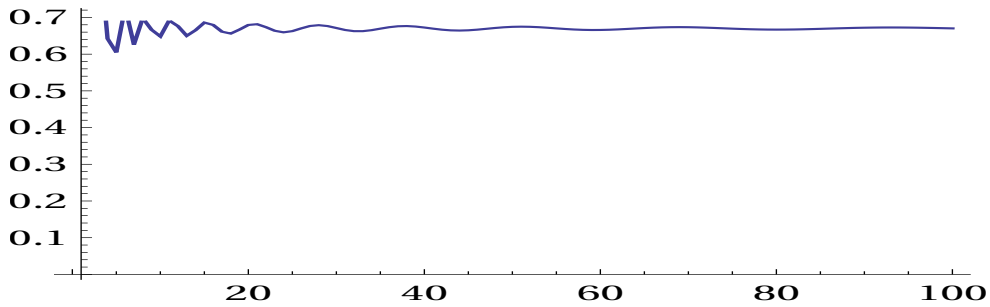
= -1.692375195790290774684627139614558154866....



(The axis is 0.99999)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.99999}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.99999}} \right] \quad (126)$$

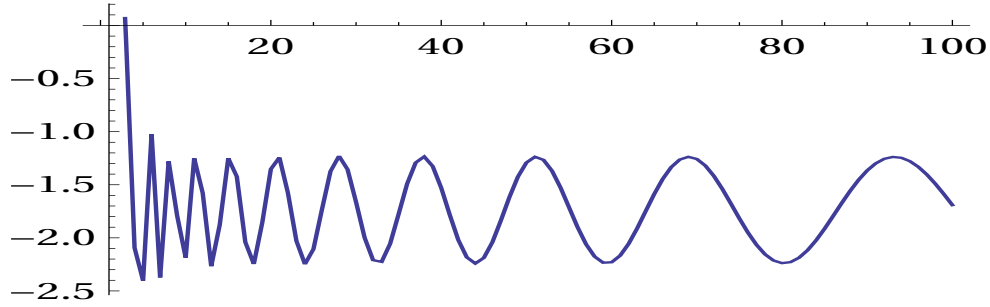
= 0.6702289830344975328514736163562128619393....



(The axis is 0.0001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.0001}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.0001}} \right] \quad (127)$$

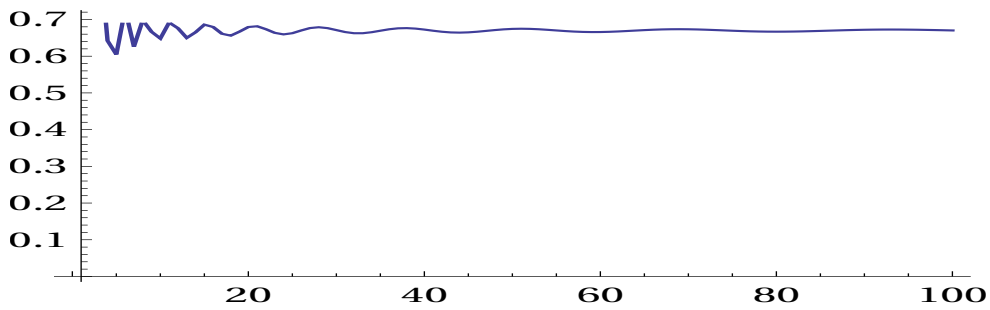
= -1.691914810408940984710921687899051853499....



(The axis is 0.9999)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.9999}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.9999}} \right] \quad (128)$$

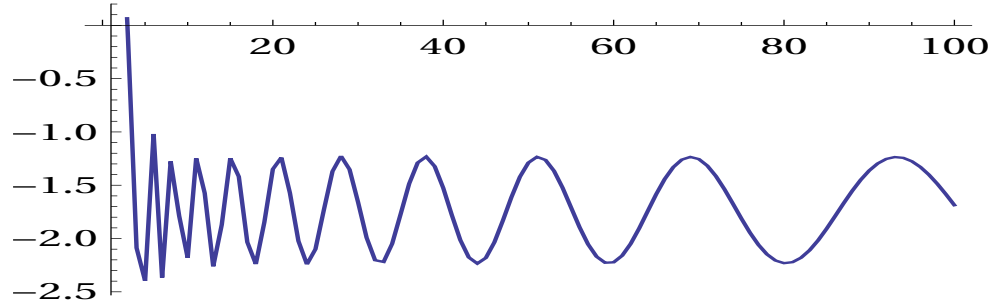
= 0.6701579473614340476047734004873606364368....



(The axis is 0.001)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.001}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.001}} \right] \quad (129)$$

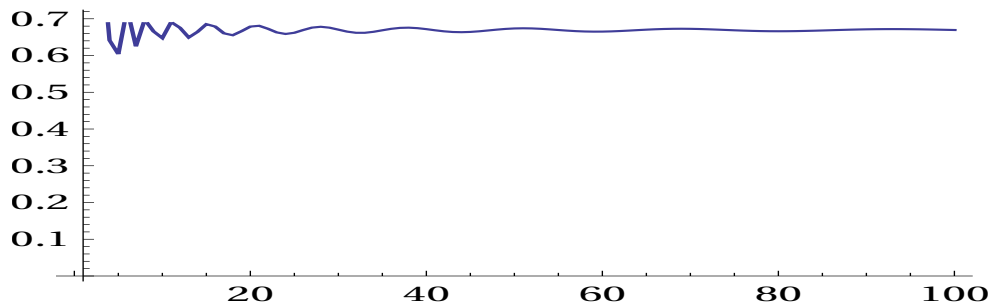
= -1.687314830139069704606318113596237362764....



(The axis is 0.999)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.999}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.999}} \right] \quad (130)$$

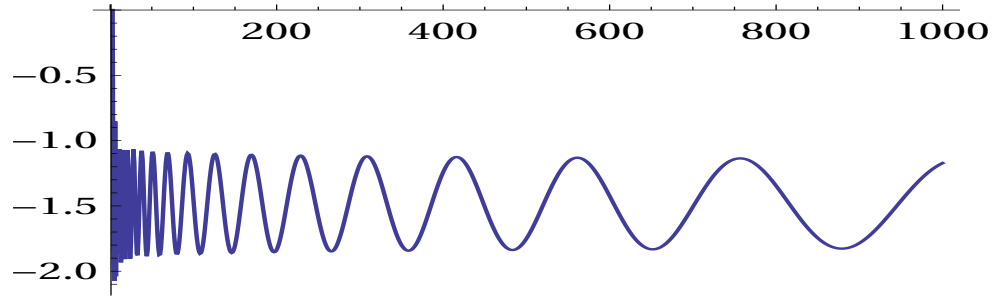
= 0.6694468942442123041861955261085612683792....



(The axis is 0.05)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.05}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.05}} \right] \quad (131)$$

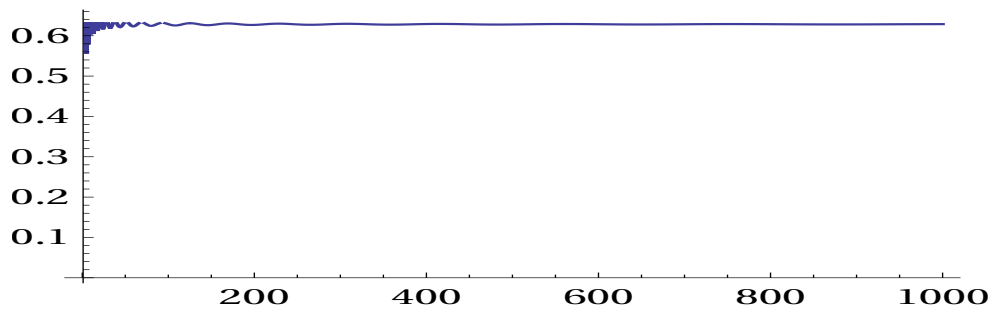
= -1.172026278004103809897515559526482605892....



(The axis is 0.95)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.95}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.95}} \right] \quad (132)$$

= 0.628793327503768552125482769229183595256....

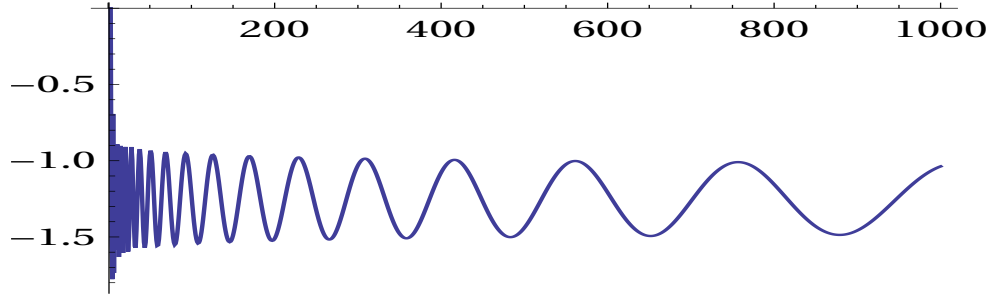




(The axis is 0.1)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.1}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.1}} \right] \quad (133)$$

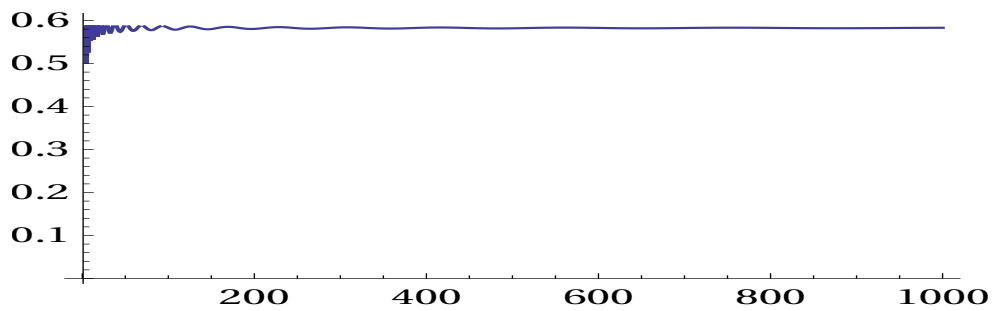
= -1.037181038243812266182221182644218150841....



(The axis is 0.9)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.9}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.9}} \right] \quad (134)$$

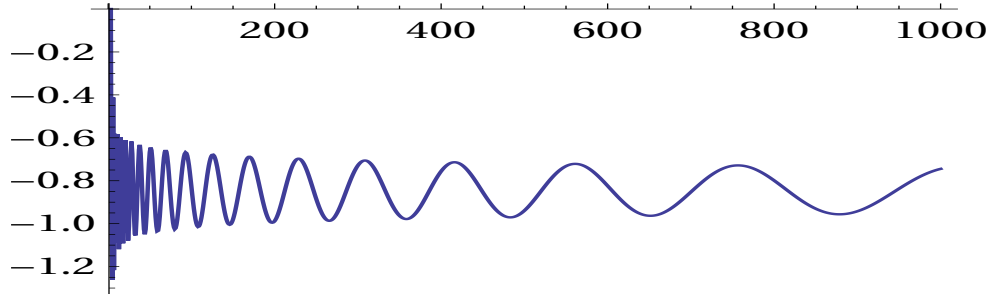
= 0.5830911596701825120483648848326651479726....



(The axis is 0.2)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.2}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.2}} \right] \quad (135)$$

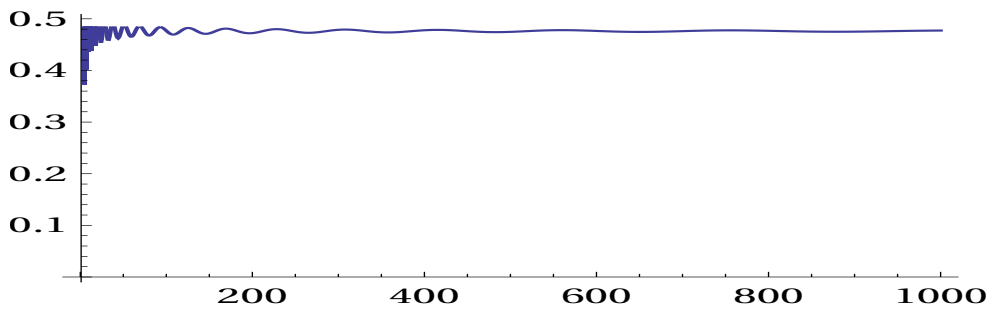
= -0.7447935509966950781141448637295280455100....



(The axis is 0.8)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.8}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.8}} \right] \quad (136)$$

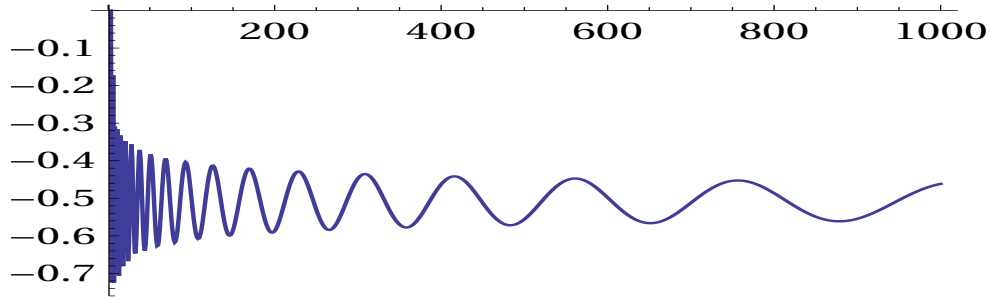
= 0.4772629985235775927819684410214800870668....



(The axis is 0.3)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.3}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.3}} \right] \quad (137)$$

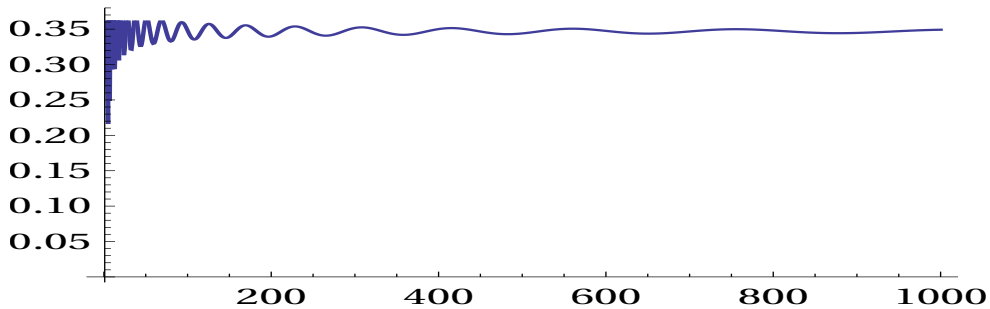
= -0.4616959596387926971677897774383840299575....



(The axis is 0.7)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.7}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.7}} \right] \quad (138)$$

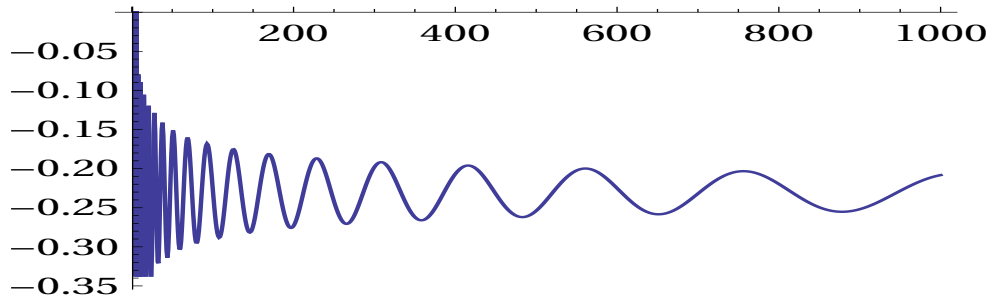
= 0.3491777768362168191173784663503557392773....



(The axis is 0.4)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.4}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.4}} \right] \quad (139)$$

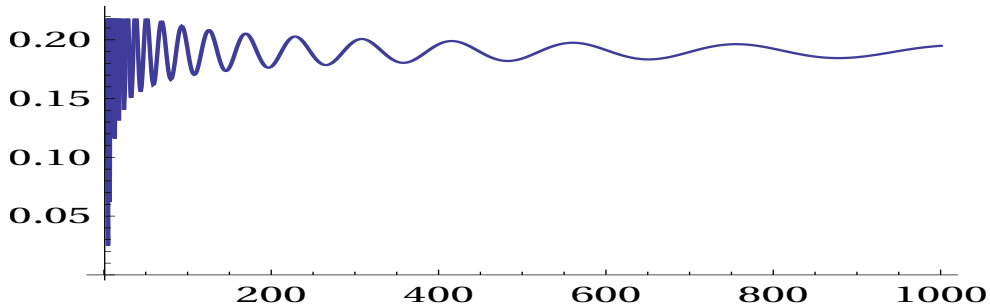
= -0.2082789088719372836582869506635596589817....



(The axis is 0.6)

$$\sum_{n=1}^{1000} \left[ \frac{\cos[(21.022) \ln(2n-1)]}{(2n-1)^{0.6}} - \frac{\cos[(21.022) \ln(2n)]}{(2n)^{0.6}} \right] \quad (140)$$

= 0.194859060814332403077140728945857530200....



### 3 conclusion

As mentioned above, although it turned out that the non-trivial zero point of Riemann hypothesis is in the very near edge of the line of real value 0.5, it can not be shown mathematically that it is a line of real value 0.5.

However, non-trivial zero values were shown.

It is to show that the non-trivial zeros of Riemann hypothesis lie on a line of real value 0.5. I think it is nearly impossible.

### References

- [1] B.Riemann.: Uber die Anzahl der Primzahlen unter einer gegebenen Grosse, Mon. Not. Berlin Akadpp.671-680 (1859)
- [2] John Derbyshire.: Prime Obsession: Bernhard Riemann and The Greatest Unsolved Problem in Mathematics, Joseph Henry Press(2003)

#### key words

Riemann hypothesis, non-trivial zero point, infinite series