

```
> restart:
```

$$\textcolor{red}{>} f := (r, \theta) \rightarrow r \cdot \cos(kn \cdot r \cdot \cos(psin - \theta));$$

$$f := (r, \theta) \rightarrow r \cos(kn r \cos(p \sin - \theta)) \quad (1)$$

$$\triangleright g := (r, \theta) \rightarrow r \cdot \sin(kn \cdot r \cdot \cos(psin - \theta));$$

$$g := (r, \theta) \rightarrow r \sin(kn r \cos(p \sin - \theta)) \quad (2)$$

>

$$\text{> simplify} \left(\int_0^{2 \cdot \pi} \int_{\frac{Din}{2}}^{\frac{Dout}{2}} f(r, \theta) \, dr \, d\theta \right);$$

$$-\frac{1}{2} \frac{1}{kn^2} \left(\int_0^{2\pi} \frac{1}{\cos(p\sin - \theta)^2} \left(2 \cos\left(\frac{1}{2} kn Din \cos(p\sin - \theta)\right) \right) \right) \quad (3)$$

$$+ Din \sin\left(\frac{1}{2} kn Din \cos(psin - \theta)\right) kn \cos(psin - \theta)$$

$$-2 \cos\left(\frac{1}{2} kn D_{out} \cos(psin - \theta)\right) - D_{out} \sin\left(\frac{1}{2} kn D_{out} \cos(psin - \theta)\right) kn \cos(psin - \theta) d\theta$$

$$\text{> simplify} \left(\int_0^{2 \cdot \pi} \int_{\frac{Din}{2}}^{\frac{Dout}{2}} g(r, \theta) \, dr \, d\theta \right);$$

$$\frac{1}{2} \frac{1}{kn^2} \left(\int_0^{2\pi} \frac{1}{\cos(p\sin - \theta)^2} \left(-2 \sin\left(\frac{1}{2} kn Din \cos(p\sin - \theta)\right) \right) \right) \quad (4)$$

$$+ Din \cos\left(\frac{1}{2} kn Din \cos(psin - \theta)\right) kn \cos(psin - \theta)$$

$$+ 2 \sin\left(\frac{1}{2} kn D_{out} \cos(psin - \theta)\right) - D_{out} \cos\left(\frac{1}{2} kn D_{out} \cos(psin - \theta)\right) kn \cos(psin - \theta) \, d\theta \Bigg)$$

>

$$\textcolor{red}{> \textit{simplify}} \left(\lim_{Dout \rightarrow 0} \frac{4}{\pi \cdot Dout^2} \cdot \int_0^{2 \cdot \pi} \int_0^{\frac{Dout}{2}} f(r, \theta) \, dr \, d\theta \right);$$

$$\textcolor{blue}{0} \quad \text{> } \textit{simplify} \left(\lim_{Dout \rightarrow 0} \frac{4}{\pi \cdot Dout^2} \cdot \int_0^{2 \cdot \pi} \int_0^{\frac{Dout}{2}} g(r, \theta) \, dr \, d\theta \right); \quad (6)$$

$$\text{> simplify}\left(\lim_{Dout \rightarrow \infty} \frac{4}{\pi \cdot Dout^2} \cdot \int_0^{2 \cdot \pi} \int_0^{\frac{Dout}{2}} f(r, \theta) \, dr \, d\theta\right);$$

$$\lim_{Dout \rightarrow \infty} \frac{1}{kn^2 \pi Dout^2} \left(2 \int_0^{2\pi} \left(-2 \cos(psin - \theta)^2 + 4 \cos\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) \cos(psin)^2 \cos(\theta)^2 + 4 \cos\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) \cos(psin) \cos(\theta) \sin(psin) \sin(\theta) + 2 \cos\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) - 2 \cos\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) \cos(\theta)^2 - 2 \cos\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) \cos(psin)^2 + 2 Dout \sin\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) kn \cos(psin - \theta) \cos(psin)^2 \cos(\theta)^2 + 2 Dout \sin\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) kn \cos(psin - \theta) \cos(psin) \cos(\theta) \sin(psin) \sin(\theta) + Dout \sin\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) kn \cos(psin - \theta) - Dout \sin\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) kn \cos(psin - \theta) \cos(\theta)^2 - Dout \sin\left(\frac{1}{2} kn Dout \cos(psin - \theta)\right) kn \cos(psin - \theta) \cos(psin)^2 \right) / \left((2 \cos(psin)^2 \cos(\theta)^2 + 2 \cos(psin) \cos(\theta) \sin(psin) \sin(\theta) + 1 - \cos(\theta)^2 - \cos(psin)^2) \cos(psin - \theta)^2 \right) d\theta \right) \quad (7)$$

$$\begin{aligned} & \text{> simplify} \left(\lim_{Dout \rightarrow \infty} \frac{4}{\pi \cdot Dout^2} \cdot \int_0^{2 \cdot \pi} \int_0^{\frac{Dout}{2}} g(r, \theta) \, dr \, d\theta \right); \\ & \lim_{Dout \rightarrow \infty} \left(-\frac{1}{\pi \, Dout^2 \, kn^2} \left(2 \left(\int_0^{2 \pi} \frac{1}{\cos(\,psin - \theta)^2} \left(-2 \sin \left(\frac{1}{2} \, kn \, Dout \cos(\,psin - \theta) \right) \right) \right) \right) \end{aligned} \quad (8)$$

$$+ D_{out} \cos\left(\frac{1}{2} kn D_{out} \cos(psin - \theta)\right) kn \cos(psin - \theta) d\theta \Bigg) \Bigg) \Bigg)$$

```
> randomize( ) :
```

```
> RANDMAX := 1012 - 1 :
```

```
> Din := 6 :
```

```
> for i from 0 by 1 while i < 300 do
```

```
    Dout := evalf(40 · (rand( ) / RANDMAX) + 10) :
```

```
    kn := evalf(1 / 9.81 · (2 · π · 0.2 · rand( ) / RANDMAX)2) :
```

```
    psin := evalf(2 · π · (rand( ) / RANDMAX)) :
```

```
    print(Dout) :
```

```
    print(kn) :
```

```
    print(psin) :
```

```
    print(int(f(r, θ), r = Din / 2 .. Dout / 2, θ = 0 .. 2 · π, numeric = true)) :
```

```
    print(int(g(r, θ), r = Din / 2 .. Dout / 2, θ = 0 .. 2 · π, numeric = true)) :
```

```
    print( ) :
```

```
end do:
```

17.73667733

0.04627764488

4.871182714

213.7062906

6.852296508 10⁻¹³

42.66128779

0.1303163431

3.956143591

400.4859664

-1. 10⁻¹⁰

49.35739945

0.01495962477

1.906647693

1852.669425

0.

17.36393757
0.1109090815
4.933701253
182.5124656
 $2.115210784 \cdot 10^{-12}$

49.74201534
0.05898573461
0.5193229516
1437.166192
 $1 \cdot 10^{-10}$

37.48042228
0.03181573664
4.198077484
1026.764227
0.

45.38945096
0.01616000889
4.056379595
1562.760449
 $-1.577671327 \cdot 10^{-11}$

31.31298023
0.02669351139
5.057516342
725.1421409
 $4.759526107 \cdot 10^{-12}$

26.73047184
0.1229979788
3.289390725
364.0017171
 $-3 \cdot 10^{-11}$

17.28528169
0.05025628045
3.139451564
200.9774401
 $-4.211853089 \cdot 10^{-12}$

16.03783785
0.08606341310
1.734403692
162.1838832
 $-9.530154443 \cdot 10^{-13}$

43.88138197
0.1079120491
2.855119103
645.2508253
0.

32.88504845
0.0001412203284
1.288469316
821.0754113
 $2.386979503 \cdot 10^{-14}$

19.54107843
0.003227805970
4.063155291
271.5959438
 $-2.435829316 \cdot 10^{-13}$

18.28373605
0.1025727162
3.585423933
206.7939962
 $-8.736955603 \cdot 10^{-12}$

21.73613595

0.07164143291
1.506902813
315.5400125
 $7.700506899 \cdot 10^{-13}$

44.78795224
0.003859462440
2.224372397
1545.733333
 $-3.638866986 \cdot 10^{-12}$

29.97674534
0.05121787227
0.3607212496
626.8428822
 $4 \cdot 10^{-11}$

30.92418601
0.001076327915
1.449871950
722.7801107
 $6.528111385 \cdot 10^{-14}$

29.90677561
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2.176611817
544.4239916
0.

35.80964159
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4.643632266
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24.76897620
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0.5020366195
452.1560126
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4.048124793
375.7825556
 $-6.538103392 \cdot 10^{-13}$

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36.31115954
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3.775611086
529.0748668
 $-2 \cdot 10^{-10}$

46.72677086
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48.43169397
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4.819301161
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 $1 \cdot 10^{-10}$

20.88257346
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2.729934696

300.9432521
-7.378653244 10⁻¹²

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0.01606180229
0.8784190928
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1.616553982
664.4088438
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188.9584540
2.814259242 10⁻¹³

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3.603676521
90.29291008
-3.480965516 10⁻¹³

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5.273787429
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1.073252598 10⁻¹¹

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0.1020106738
954.5661515

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13.87182032
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112.1381845
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239.7601685
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1569.995138
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 $-1 \cdot 10^{-10}$

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104.1864705

5.248579349 10⁻¹⁴

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1.474519320

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4.636291351 10⁻¹³

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6.030857754

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3.321014445

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0.9133663843

333.3803595
1.404809602 10⁻¹¹

30.14937606
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3.794303142
683.3808573
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44.47251784
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25.32241563
0.07611264507
3.650853415
419.2831275
-1.707722852 10⁻¹¹

38.57954153
0.06117735268
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948.7944936
1. 10⁻¹⁰

28.04370360
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17.40781688
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17.49577388

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179.2544325

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29.59090867

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573.0583325

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18.38677857

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669.3133731

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4.677693524
777.3675480
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5.522352263
415.7729763
 1.10^{-10}

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472.7999840
 $-1 \cdot 10^{-10}$

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17.20695301

0.1171485382
3.837607420
176.3960320
 $-7.102762822 \cdot 10^{-12}$

48.50174558
0.05701417721
5.053799285
1411.710329
 $1 \cdot 10^{-10}$

29.76907566
0.04279482958
0.3961794358
633.0930856
 $1.722577636 \cdot 10^{-11}$

31.09374503
0.09815069727
4.810674178
530.7891629
 $1 \cdot 10^{-10}$

19.77464109
0.07006450109
3.886383480
260.9421288
 $-6.497691274 \cdot 10^{-12}$

26.03638203
0.008194941158
4.712517969
503.3867773
 $5.107025913 \cdot 10^{-15}$

27.94381284
0.006231778239

0.4356855456
584.4293097
 $2.102096275 \cdot 10^{-12}$

34.73468734
0.03915701830
1.655328596
865.6227541
0.

21.78818011
0.01079839405
1.459655737
343.9327535
 $2.059463711 \cdot 10^{-13}$

42.21595282
0.01618381051
4.149484919
1351.141424
 $-1.111244430 \cdot 10^{-11}$

31.63763967
0.1494372581
4.841025008
323.4041804
 $1 \cdot 10^{-10}$

47.47795556
0.02813176289
2.443597061
1645.281595
 $1 \cdot 10^{-10}$

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2.277585647

552.5610949
-1.660316329 10⁻¹¹

48.45393879
0.1111823653
3.862417517
579.3933875
-2. 10⁻¹⁰

13.92811326
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1.661380287
106.2039129
-5.697664562 10⁻¹³

44.59846457
0.003134538051
4.692525108
1532.947176
-8.615330671 10⁻¹⁴

45.54601663
0.05532551871
4.952733558
1298.483725
-1. 10⁻¹⁰

23.72838205
0.1392840932
2.989403691
279.8319733
-2.354338946 10⁻¹¹

43.61437164
0.02937999287
5.511090049
1390.389278

$$1.10^{-10}$$

23.26015473

0.1262517118

1.426537707

292.4790300

0.

10.53698245

0.004667238567

0.2546761809

58.92095519

7.438494265 10^{-14}

38.05528978

0.01998725560

4.718124191

1088.715596

1.239008895 10^{-13}

29.30490015

0.03315146048

4.368930107

626.5439726

-4.773514917 10^{-12}

16.91903753

0.1321985534

1.021000714

163.7381595

5.304007233 10^{-12}

18.38228902

0.001147328561

2.497390539

237.1147732

-9.503509091 10^{-14}

17.79737248
0.01834273014
0.05363953532
219.6808819
 $1.707245456 \cdot 10^{-12}$

24.56651109
0.01490685271
3.845127491
443.7473882
 $-2.854771974 \cdot 10^{-12}$

28.87616756
0.001616751001
1.921552048
626.5720936
 $-2.298161661 \cdot 10^{-13}$

49.94222640
0.0002421933561
4.825854408
1930.677214
 $6.000755448 \cdot 10^{-14}$

47.84111129
0.05638066616
4.174255902
1390.549824
0.

17.32734464
0.004341560207
5.814889460
207.4900539
 $3.341354970 \cdot 10^{-13}$

29.05873171
0.04807566465
3.190000060
595.3630819
 -2.10^{-11}

11.59299856
0.1251933406
3.065701141
70.97932518
 $-2.725708548 \cdot 10^{-12}$

24.63450232
0.09102915735
5.295501282
377.5372806
 2.10^{-11}

36.78499438
0.05013434453
5.775880424
925.5355375
 3.10^{-11}

49.61568691
0.1212164539
2.116380342
404.7656289
 -1.10^{-10}

45.82373488
0.1104246974
3.039307544
610.3014424
 -1.10^{-10}

46.29336781

0.0003530995708
4.527381026
1654.879493
 $-1.100231017 \cdot 10^{-13}$

27.44833307
0.04057684869
1.035403884
540.8618471
 $7.237765942 \cdot 10^{-12}$

44.98145298
0.07261190859
2.325859165
1086.947530
 $-1. \cdot 10^{-10}$

20.44716893
0.00004116370126
5.766240867
300.0901985
 $5.148659277 \cdot 10^{-15}$

17.02896849
0.09389367740
4.305593915
182.0420284
 $-2.989053449 \cdot 10^{-12}$

32.50829866
0.03797998985
2.604554546
762.8558484
 $-5. \cdot 10^{-11}$

40.05660765
0.05090753044

1.186669842

1075.188627

1.10^{-10}

45.28273137

0.0001186392459

1.370440557

1582.203379

$3.741451593 \cdot 10^{-14}$

41.30382133

0.07693107393

5.152457663

931.2357999

1.10^{-10}

17.62197429

0.09981784045

2.232196510

193.1004584

$-5.411449067 \cdot 10^{-12}$

23.02239985

0.01019463901

0.7582324838

387.2980588

$1.529887328 \cdot 10^{-12}$

45.48665346

0.1544202592

5.633549192

94.93735134

1.10^{-10}

44.30126626

0.1218840867

5.862104060

476.5161605

1.10^{-10}

39.50019150

0.09065214149

4.165144706

767.7748405

2.10^{-10}

33.02665126

0.1258187156

4.797322724

442.7014981

0.

19.70828337

0.09377332910

2.045306335

245.6433680

$-5.418193672 \cdot 10^{-12}$

41.83956650

0.00007169408470

5.790583143

1346.603504

$7.968625759 \cdot 10^{-14}$

30.14990938

0.04223865200

5.583153950

650.1458535

$1.482031164 \cdot 10^{-11}$

15.56045384

0.01461254914

2.616200907

161.5920503

-7.752687381 10⁻¹³

34.33542821

0.02567262130

2.029186467

875.3679555

-7.894795928 10⁻¹²

23.31333382

0.1159321228

2.645846811

308.7169818

-1.894984170 10⁻¹¹

27.96403712

0.01698632184

0.5531632659

581.5859546

5.361044941 10⁻¹²

16.19499617

0.06907111883

5.695497435

169.9192080

3.915645586 10⁻¹²

34.19675172

0.1218783276

1.853701014

474.5584098

0.

10.79838748

0.1113233600

1.968738322

59.62562325

-7.747136266 10⁻¹³

18.27673595
0.04264729251
4.007350254
229.1875712
 $-2.787992059 \cdot 10^{-12}$

16.83112912
0.1519072044
4.660269136
152.4864726
 $-5.986322549 \cdot 10^{-13}$

45.37582882
0.02632860544
0.7671627459
1517.793751
 $1 \cdot 10^{-10}$

49.86448660
0.01203615092
2.101441985
1902.696561
 $-1.301714292 \cdot 10^{-11}$

25.17750876
0.0005039367643
0.1053882525
469.5925218
 $1.361827318 \cdot 10^{-13}$

29.83777744
0.1283580583
6.188662155
396.3615514
0.

30.04737894
0.02852838751
1.525046454
664.6860023
 $5.764277944 \cdot 10^{-13}$

11.77499207
0.04272628902
5.945947897
79.82042542
 $9.804379530 \cdot 10^{-13}$

29.52197202
0.09880846140
5.547702927
489.9671164
 $1 \cdot 10^{-10}$

33.52946303
0.004898481796
5.347306440
853.9464673
 $1.884714607 \cdot 10^{-12}$

21.48272747
0.06926236855
2.620586647
309.8389612
 $-9.643175147 \cdot 10^{-12}$

16.38427158
0.007216250594
1.630595353
182.4709369
 $-3.175237850 \cdot 10^{-14}$

38.09396768

0.01008408410
1.911368564
1106.212026
 $-3.214317701 \cdot 10^{-12}$

43.63694429
0.02695361024
2.958097396
1403.562150
 $-1. \cdot 10^{-11}$

26.26417584
0.06982697977
5.621072734
458.6708421
 $1.615796386 \cdot 10^{-11}$

43.10224547
0.09239254776
0.03755971451
818.0511518
 $3. \cdot 10^{-10}$

46.45687870
0.04920316136
0.8586781740
1404.767801
 $1. \cdot 10^{-10}$

27.68263318
0.04530056934
3.621346286
544.5656796
 $-1.410338513 \cdot 10^{-11}$

41.54273819
0.03872476668

0.5238103181
1220.506450
0.

46.56787981
0.01271194761
3.668100074
1656.336304
 -1.10^{-11}

21.63047017
0.007301878181
0.8932624699
338.9108951
 $7.824851878 \cdot 10^{-13}$

24.50193904
0.01536125366
3.995438252
441.1587738
 $-2.516653552 \cdot 10^{-12}$

38.75636040
0.1350238224
1.085590677
392.6837361
0.

46.82627287
0.0002364827949
2.855214150
1693.861489
 $-4.014566457 \cdot 10^{-13}$

31.70681145
0.01291559703
1.083031716

757.1782693
3.299582829 10^{-12}

21.69438974
0.0002797424057
4.882636574
341.3701761
8.198303147 10^{-15}

18.09324755
0.01610778993
5.293212424
228.1644073
8.730793866 10^{-13}

47.39953805
0.1207151693
0.7298039590
452.1542048
1. 10^{-10}

18.38341948
0.1140568768
5.409001112
202.7291199
7.244607692 10^{-12}

45.27795923
0.01218126864
0.6537431527
1566.612180
2. 10^{-11}

44.45955563
0.05142701289
5.323071336
1284.089952

$$1.10^{-10}$$

$$\begin{aligned} &11.14320719 \\ &0.001718957505 \\ &0.6190742273 \\ &69.24836949 \\ &2.824129819 \cdot 10^{-14} \end{aligned}$$

$$\begin{aligned} &33.89591480 \\ &0.05600495373 \\ &2.446316062 \\ &776.3183935 \\ &0. \end{aligned}$$

$$\begin{aligned} &17.98931104 \\ &0.02709932107 \\ &3.005685432 \\ &224.0329365 \\ &-2.581934666 \cdot 10^{-12} \end{aligned}$$

$$\begin{aligned} &31.77873246 \\ &0.01961844897 \\ &3.255850371 \\ &755.3066907 \\ &-1.062527843 \cdot 10^{-11} \end{aligned}$$

$$\begin{aligned} &48.71151466 \\ &0.04406165977 \\ &2.369043755 \\ &1579.678573 \\ &-1.10^{-10} \end{aligned}$$

$$\begin{aligned} &27.02942893 \\ &0.01147244407 \\ &1.279544719 \\ &543.8113985 \\ &1.104671910 \cdot 10^{-12} \end{aligned}$$

37.09047749
0.06386754254
1.745458750
873.6134901
0.

30.27385826
0.1298665620
4.608247654
396.0683591
 -1.10^{-10}

14.43960728
0.1114654275
6.178314176
122.9723803
 $4.993672142 \cdot 10^{-12}$

22.40782968
0.04925150307
0.6347786613
351.3390009
 $7.397388258 \cdot 10^{-12}$

43.26321465
0.08436657582
0.9912253208
909.2554120
0.

36.63968963
0.001502301035
0.7377288973
1025.996915
 $9.368061882 \cdot 10^{-13}$

25.90025035
0.04921781383
3.249455559
472.3601230
 $-1.390931814 \cdot 10^{-11}$

13.35138331
0.09211535830
0.4375747778
105.4850675
 $3.010036664 \cdot 10^{-12}$

49.39220818
0.02996194690
1.760579173
1759.628053
0.

37.36122032
0.03267019444
0.9063581025
1017.810136
0.

19.03971729
0.01960310515
4.617385978
255.2155713
 $-2.118305531 \cdot 10^{-13}$

31.91229847
0.1416919897
1.880700240
359.1174096
 $-1. \cdot 10^{-10}$

47.06718945

0.0008989593336
1.202699579
1711.536865
 $5.782596624 \cdot 10^{-13}$

39.75649274
0.008964034891
1.659989239
1208.191393
 $-8.689715614 \cdot 10^{-13}$

21.72976985
0.01592349170
1.132144890
341.1995275
 $1.167010932 \cdot 10^{-12}$

42.76019305
0.01094360662
1.744836571
1397.973690
 $-2.575495373 \cdot 10^{-12}$

49.47572602
0.03565633959
1.389870053
1713.290645
0.

30.76680791
0.06805840116
0.3303806849
618.0086984
 $2 \cdot 10^{-11}$

34.10019994
0.01212654295

1.453282623
880.1383315
 $9.534595335 \cdot 10^{-13}$

33.54184221
0.1026414601
1.308008245
566.3902584
0.

24.69220749
0.04371709962
1.015377672
433.4206450
 $5.840439243 \cdot 10^{-12}$

29.64121221
0.1575071265
6.035329937
287.9244421
 $1 \cdot 10^{-11}$

45.29323948
0.01002457249
0.9437511679
1572.597637
 $9.362288722 \cdot 10^{-12}$

43.27721719
0.009872143014
4.812321510
1434.339955
 $1.402433725 \cdot 10^{-12}$

40.92716991
0.04534191501
1.350284307

1150.772489

-1.10^{-10}

28.59974118

0.1495915122

3.759557007

311.1395817

-2.10^{-10}

12.11175693

0.08398032121

3.149849275

83.47807530

$-2.198019544 \cdot 10^{-12}$

18.94889913

0.08472690436

5.462782526

231.8455457

$6.385114659 \cdot 10^{-12}$

28.22435762

0.04757148596

6.067327162

562.8651744

1.10^{-11}

16.24443024

0.08559392344

5.497288605

166.9386192

$4.153233313 \cdot 10^{-12}$

22.81462632

0.1031466310

5.866606157

314.0871931

$$1.10^{-11}$$

$$\begin{aligned} &19.17891357 \\ &0.09242319443 \\ &2.515612920 \\ &233.4374581 \\ &-8.387956996 \cdot 10^{-12} \end{aligned}$$

$$\begin{aligned} &34.48075776 \\ &0.03152688373 \\ &1.040713046 \\ &871.4734841 \\ &2.10^{-11} \end{aligned}$$

$$\begin{aligned} &36.46544124 \\ &0.01894360460 \\ &6.122061736 \\ &1000.606874 \\ &1.540456651 \cdot 10^{-11} \end{aligned}$$

$$\begin{aligned} &16.41466387 \\ &0.1247579199 \\ &2.427526342 \\ &157.2884308 \\ &-6.439293543 \cdot 10^{-12} \end{aligned}$$

$$\begin{aligned} &23.05474568 \\ &0.06343280972 \\ &2.212936939 \\ &362.0236837 \\ &-7.763567567 \cdot 10^{-12} \end{aligned}$$

$$\begin{aligned} &20.86595458 \\ &0.02213899024 \\ &1.517517119 \\ &311.4189134 \\ &1.767475055 \cdot 10^{-13} \end{aligned}$$

24.90454861
0.05429881881
1.199489041
431.6394113
 $5.116351787 \cdot 10^{-12}$

27.05264273
0.01895815739
5.373797182
541.8154548
 $3.931077686 \cdot 10^{-12}$

46.31619263
0.05806803517
0.8153374827
1303.456731
 $1 \cdot 10^{-10}$

18.06341187
0.1309134036
0.7117647163
186.2839369
 $8.910761018 \cdot 10^{-12}$

42.46735221
0.07708690219
4.446251623
964.0837209
 $-1 \cdot 10^{-10}$

45.49006410
0.0005509325236
4.654825563
1596.954269
 $-5.073719223 \cdot 10^{-14}$

36.15127424
0.04005576269
0.5298763323
932.4170844
 1.10^{-11}

14.41001113
0.04028195578
4.208329447
133.1527636
 $-9.279244040 \cdot 10^{-13}$

21.95572538
0.01204284173
4.650257863
349.5079518
 $-1.308120279 \cdot 10^{-13}$

38.99084346
0.006282768321
4.109162508
1163.518856
 $-3.624461842 \cdot 10^{-12}$

39.88126767
0.007631755760
5.966493341
1217.302667
 $7.905676114 \cdot 10^{-12}$

13.65001305
0.06586610553
2.198819601
114.5355161
 $-1.546318629 \cdot 10^{-12}$

19.77234386

0.01937628820
1.727602237
277.3793402
 $-3.982369989 \cdot 10^{-13}$

29.71746673
0.1184035712
1.615593378
429.8790887
0.

41.02349533
0.1056511031
4.212827189
655.7391071
 $-1 \cdot 10^{-10}$

30.65255541
0.07605150731
2.197868631
591.4291565
 $-1 \cdot 10^{-10}$

23.80000152
0.05040511072
1.038868157
396.9774034
 $5.774491996 \cdot 10^{-12}$

45.37915605
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1.122390359
1589.070270
 $5.051514762 \cdot 10^{-14}$

41.43929953
0.1093538306

3.283743724
621.8699087
0.

30.80032922
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1.816553012
712.4030221
 $-1.732836097 \cdot 10^{-12}$

22.68032741
0.04976813669
0.7714547555
359.9374110
 $6.932898700 \cdot 10^{-12}$

46.84697034
0.01740157964
6.265500601
1659.850672
 $1 \cdot 10^{-11}$

45.83501580
0.1051238008
5.867999381
681.8953365
 $1 \cdot 10^{-10}$

47.20088009
0.01736043551
1.992492853
1685.081340
0.

44.87447685
0.000002806863115
1.720252457

1553.296612
-6.626643678 10⁻¹⁶

14.67291702
0.0005164973579
5.412800818
140.8172712
1.695171781 10⁻¹⁴

34.50335061
0.1144979236
1.960175632
519.5202019
0.

21.32003802
0.05512719478
2.004697295
313.6296784
-3.780753488 10⁻¹²

39.22732446
0.004877452909
4.717726384
1178.901730
3.597122600 10⁻¹⁴

30.32374667
0.002814649626
3.331080529
693.7583927
-1.319718640 10⁻¹²

19.71530875
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4.883673758
277.0041426

8.982398159 10⁻¹⁵

19.80901224

0.003412093767

5.020987175

279.8698969

1.357802759 10⁻¹³

49.87848240

0.09264093936

1.899012943

881.9839148

0.

44.58643916

0.02341284869

6.160967024

1480.506803

8. 10⁻¹¹

18.52249702

0.1099917995

5.473650954

208.0934045

7.655209799 10⁻¹²

46.17574090

0.1504207072

1.407887163

115.8855377

0.

29.85310964

0.01148895173

4.358045243

669.1131500

-1.808109218 10⁻¹²

46.54662704
0.002157491031
4.851080828
1672.824211
5.258016245 10⁻¹³

(9)

