

A)

```
1- commandwindow
2-clear
3-clc
4-A=[0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]
5-b=[-4;2;6;4]
6-tolu= inv(A)
7-Q=tolu*b
```

A =

```
0 10 4 -2
-3 -17 1 2
1 1 1 0
8 -34 16 -10
```

b =

```
-4
2
6
4
```

tolu =

```
-0.1786 -0.1020 0.5714 0.0153
0.0357 -0.0153 0.0357 -0.0102
0.1429 0.1173 0.3929 -0.0051
-0.0357 0.1582 0.9643 -0.0612
```

Q =

```
4.0000
```

-0.0000

2.0000

6.0000

>>

B)

```
1-commandwindow
2-clear
3-clc
4-close all
5-syms t
6-d=1.5*exp(-0.75*t)*sin(0.85*t)+(0.375*t)
7-tn=[0:0.01:2.5]
8-dn=subs(d,tn)
9-v=diff(d)
10-vn=subs(v,tn)
11-figure(1)
12-plot(tn,vn)
13-xlabel('time(min)')
14-ylabel('velocity(km/min)')
15-grid on
16-grid minor
17-a=diff(v)
18-an=subs(a,tn)
19-figure(2)
20-plot(tn,an)
21-xlabel('time(min)')
22-ylabel('acceleration(km/min^2)')
23-grid on
24-grid minor
25-figure(3)
26-plot(tn,vn,tn,an)
27-grid on
28-grid minor
29-xlabel('time(min)')
30-ylabel('variable')
31-legend('velocity(km/min)', 'acceleration(km/min^2)')
```

d =

$$(3*t)/8 + (3*\sin((17*t)/20)*\exp(-(3*t)/4))/2$$

tn =

Columns 1 through 9

0	0.0100	0.0200	0.0300	0.0400	0.0500	0.0600
0.0700	0.0800					

Columns 10 through 18

0.0900	0.1000	0.1100	0.1200	0.1300	0.1400	0.1500
0.1600	0.1700					

Columns 19 through 27

0.1800	0.1900	0.2000	0.2100	0.2200	0.2300	0.2400
0.2500	0.2600					

Columns 28 through 36

0.2700	0.2800	0.2900	0.3000	0.3100	0.3200	0.3300
0.3400	0.3500					

Columns 37 through 45

0.3600	0.3700	0.3800	0.3900	0.4000	0.4100	0.4200
0.4300	0.4400					

Columns 46 through 54

0.4500	0.4600	0.4700	0.4800	0.4900	0.5000	0.5100
0.5200	0.5300					

Columns 55 through 63

0.5400	0.5500	0.5600	0.5700	0.5800	0.5900	0.6000
0.6100	0.6200					

Columns 64 through 72

0.6300	0.6400	0.6500	0.6600	0.6700	0.6800	0.6900
0.7000	0.7100					

Columns 73 through 81

0.7200	0.7300	0.7400	0.7500	0.7600	0.7700	0.7800
0.7900	0.8000					

Columns 82 through 90

0.8100	0.8200	0.8300	0.8400	0.8500	0.8600	0.8700
0.8800	0.8900					

Columns 91 through 99

0.9000 0.9100 0.9200 0.9300 0.9400 0.9500 0.9600
0.9700 0.9800

Columns 100 through 108

0.9900 1.0000 1.0100 1.0200 1.0300 1.0400 1.0500
1.0600 1.0700

Columns 109 through 117

1.0800 1.0900 1.1000 1.1100 1.1200 1.1300 1.1400
1.1500 1.1600

Columns 118 through 126

1.1700 1.1800 1.1900 1.2000 1.2100 1.2200 1.2300
1.2400 1.2500

Columns 127 through 135

1.2600 1.2700 1.2800 1.2900 1.3000 1.3100 1.3200
1.3300 1.3400

Columns 136 through 144

1.3500 1.3600 1.3700 1.3800 1.3900 1.4000 1.4100
1.4200 1.4300

Columns 145 through 153

1.4400 1.4500 1.4600 1.4700 1.4800 1.4900 1.5000
1.5100 1.5200

Columns 154 through 162

1.5300 1.5400 1.5500 1.5600 1.5700 1.5800 1.5900
1.6000 1.6100

Columns 163 through 171

1.6200 1.6300 1.6400 1.6500 1.6600 1.6700 1.6800
1.6900 1.7000

Columns 172 through 180

1.7100 1.7200 1.7300 1.7400 1.7500 1.7600 1.7700
1.7800 1.7900

Columns 181 through 189

1.8000 1.8100 1.8200 1.8300 1.8400 1.8500 1.8600
1.8700 1.8800

Columns 190 through 198

1.8900 1.9000 1.9100 1.9200 1.9300 1.9400 1.9500
1.9600 1.9700

Columns 199 through 207

1.9800 1.9900 2.0000 2.0100 2.0200 2.0300 2.0400
2.0500 2.0600

Columns 208 through 216

2.0700 2.0800 2.0900 2.1000 2.1100 2.1200 2.1300
2.1400 2.1500

Columns 217 through 225

2.1600 2.1700 2.1800 2.1900 2.2000 2.2100 2.2200
2.2300 2.2400

Columns 226 through 234

2.2500 2.2600 2.2700 2.2800 2.2900 2.3000 2.3100
2.3200 2.3300

Columns 235 through 243

2.3400 2.3500 2.3600 2.3700 2.3800 2.3900 2.4000
2.4100 2.4200

Columns 244 through 251

2.4300 2.4400 2.4500 2.4600 2.4700 2.4800 2.4900
2.5000

dn =

[0, (3*exp(-3/400)*sin(17/2000))/2 + 3/800, (3*exp(-
3/200)*sin(17/1000))/2 + 3/400, (3*exp(-9/400)*sin(51/2000))/2 +
9/800, (3*exp(-3/100)*sin(17/500))/2 + 3/200, (3*exp(-
3/80)*sin(17/400))/2 + 3/160, (3*exp(-9/200)*sin(51/1000))/2 + 9/400,
(3*exp(-21/400)*sin(119/2000))/2 + 21/800, (3*exp(-
3/50)*sin(17/250))/2 + 3/100, (3*exp(-27/400)*sin(153/2000))/2 +
27/800, (3*exp(-3/40)*sin(17/200))/2 + 3/80, (3*exp(-
33/400)*sin(187/2000))/2 + 33/800, (3*exp(-9/100)*sin(51/500))/2 +
9/200, (3*exp(-39/400)*sin(221/2000))/2 + 39/800, (3*exp(-
21/200)*sin(119/1000))/2 + 21/400, (3*exp(-9/80)*sin(51/400))/2 +
9/160, (3*exp(-3/25)*sin(17/125))/2 + 3/50, (3*exp(-

51/400)*sin(289/2000))/2 + 51/800, (3*exp(-27/200)*sin(153/1000))/2 +
27/400, (3*exp(-57/400)*sin(323/2000))/2 + 57/800, (3*exp(-
3/20)*sin(17/100))/2 + 3/40, (3*exp(-63/400)*sin(357/2000))/2 +
63/800, (3*exp(-33/200)*sin(187/1000))/2 + 33/400, (3*exp(-
69/400)*sin(391/2000))/2 + 69/800, (3*exp(-9/50)*sin(51/250))/2 +
9/100, (3*exp(-3/16)*sin(17/80))/2 + 3/32, (3*exp(-
39/200)*sin(221/1000))/2 + 39/400, (3*exp(-81/400)*sin(459/2000))/2 +
81/800, (3*exp(-21/100)*sin(119/500))/2 + 21/200, (3*exp(-
87/400)*sin(493/2000))/2 + 87/800, (3*exp(-9/40)*sin(51/200))/2 +
9/80, (3*exp(-93/400)*sin(527/2000))/2 + 93/800, (3*exp(-
6/25)*sin(34/125))/2 + 3/25, (3*exp(-99/400)*sin(561/2000))/2 +
99/800, (3*exp(-51/200)*sin(289/1000))/2 + 51/400, (3*exp(-
21/80)*sin(119/400))/2 + 21/160, (3*exp(-27/100)*sin(153/500))/2 +
27/200, (3*exp(-111/400)*sin(629/2000))/2 + 111/800, (3*exp(-
57/200)*sin(323/1000))/2 + 57/400, (3*exp(-117/400)*sin(663/2000))/2 +
117/800, (3*exp(-3/10)*sin(17/50))/2 + 3/20, (3*exp(-
123/400)*sin(697/2000))/2 + 123/800, (3*exp(-63/200)*sin(357/1000))/2
+ 63/400, (3*exp(-129/400)*sin(731/2000))/2 + 129/800, (3*exp(-
33/100)*sin(187/500))/2 + 33/200, (3*exp(-27/80)*sin(153/400))/2 +
27/160, (3*exp(-69/200)*sin(391/1000))/2 + 69/400, (3*exp(-
141/400)*sin(799/2000))/2 + 141/800, (3*exp(-9/25)*sin(51/125))/2 +
9/50, (3*exp(-147/400)*sin(833/2000))/2 + 147/800, (3*exp(-
3/8)*sin(17/40))/2 + 3/16, (3*exp(-153/400)*sin(867/2000))/2 +
153/800, (3*exp(-39/100)*sin(221/500))/2 + 39/200, (3*exp(-
159/400)*sin(901/2000))/2 + 159/800, (3*exp(-81/200)*sin(459/1000))/2
+ 81/400, (3*exp(-33/80)*sin(187/400))/2 + 33/160, (3*exp(-
21/50)*sin(119/250))/2 + 21/100, (3*exp(-171/400)*sin(969/2000))/2 +
171/800, (3*exp(-87/200)*sin(493/1000))/2 + 87/400, (3*exp(-
177/400)*sin(1003/2000))/2 + 177/800, (3*exp(-9/20)*sin(51/100))/2 +
9/40, (3*exp(-183/400)*sin(1037/2000))/2 + 183/800, (3*exp(-
93/200)*sin(527/1000))/2 + 93/400, (3*exp(-189/400)*sin(1071/2000))/2
+ 189/800, (3*exp(-12/25)*sin(68/125))/2 + 6/25, (3*exp(-
39/80)*sin(221/400))/2 + 39/160, (3*exp(-99/200)*sin(561/1000))/2 +
99/400, (3*exp(-201/400)*sin(1139/2000))/2 + 201/800, (3*exp(-
51/100)*sin(289/500))/2 + 51/200, (3*exp(-207/400)*sin(1173/2000))/2 +
207/800, (3*exp(-21/40)*sin(119/200))/2 + 21/80, (3*exp(-
213/400)*sin(1207/2000))/2 + 213/800, (3*exp(-27/50)*sin(153/250))/2 +
27/100, (3*exp(-219/400)*sin(1241/2000))/2 + 219/800, (3*exp(-
111/200)*sin(629/1000))/2 + 111/400, (3*exp(-9/16)*sin(51/80))/2 +
9/32, (3*exp(-57/100)*sin(323/500))/2 + 57/200, (3*exp(-
231/400)*sin(1309/2000))/2 + 231/800, (3*exp(-
117/200)*sin(663/1000))/2 + 117/400, (3*exp(-
237/400)*sin(1343/2000))/2 + 237/800, (3*exp(-3/5)*sin(17/25))/2 +
3/10, (3*exp(-243/400)*sin(1377/2000))/2 + 243/800, (3*exp(-
123/200)*sin(697/1000))/2 + 123/400, (3*exp(-
249/400)*sin(1411/2000))/2 + 249/800, (3*exp(-63/100)*sin(357/500))/2
+ 63/200, (3*exp(-51/80)*sin(289/400))/2 + 51/160, (3*exp(-
129/200)*sin(731/1000))/2 + 129/400, (3*exp(-
261/400)*sin(1479/2000))/2 + 261/800, (3*exp(-33/50)*sin(187/250))/2 +
33/100, (3*exp(-267/400)*sin(1513/2000))/2 + 267/800, (3*exp(-
27/40)*sin(153/200))/2 + 27/80, (3*exp(-273/400)*sin(1547/2000))/2 +
273/800, (3*exp(-69/100)*sin(391/500))/2 + 69/200, (3*exp(-

279/400)*sin(1581/2000))/2 + 279/800, (3*exp(-
141/200)*sin(799/1000))/2 + 141/400, (3*exp(-57/80)*sin(323/400))/2 +
57/160, (3*exp(-18/25)*sin(102/125))/2 + 9/25, (3*exp(-
291/400)*sin(1649/2000))/2 + 291/800, (3*exp(-
147/200)*sin(833/1000))/2 + 147/400, (3*exp(-
297/400)*sin(1683/2000))/2 + 297/800, (3*exp(-3/4)*sin(17/20))/2 +
3/8, (3*exp(-303/400)*sin(1717/2000))/2 + 303/800, (3*exp(-
153/200)*sin(867/1000))/2 + 153/400, (3*exp(-
309/400)*sin(1751/2000))/2 + 309/800, (3*exp(-39/50)*sin(221/250))/2 +
39/100, (3*exp(-63/80)*sin(357/400))/2 + 63/160, (3*exp(-
159/200)*sin(901/1000))/2 + 159/400, (3*exp(-
321/400)*sin(1819/2000))/2 + 321/800, (3*exp(-81/100)*sin(459/500))/2
+ 81/200, (3*exp(-327/400)*sin(1853/2000))/2 + 327/800, (3*exp(-
33/40)*sin(187/200))/2 + 33/80, (3*exp(-333/400)*sin(1887/2000))/2 +
333/800, (3*exp(-21/25)*sin(119/125))/2 + 21/50, (3*exp(-
339/400)*sin(1921/2000))/2 + 339/800, (3*exp(-
171/200)*sin(969/1000))/2 + 171/400, (3*exp(-69/80)*sin(391/400))/2 +
69/160, (3*exp(-87/100)*sin(493/500))/2 + 87/200, (3*exp(-
351/400)*sin(1989/2000))/2 + 351/800, (3*exp(-
177/200)*sin(1003/1000))/2 + 177/400, (3*exp(-
357/400)*sin(2023/2000))/2 + 357/800, (3*exp(-9/10)*sin(51/50))/2 +
9/20, (3*exp(-363/400)*sin(2057/2000))/2 + 363/800, (3*exp(-
183/200)*sin(1037/1000))/2 + 183/400, (3*exp(-
369/400)*sin(2091/2000))/2 + 369/800, (3*exp(-93/100)*sin(527/500))/2
+ 93/200, (3*exp(-15/16)*sin(17/16))/2 + 15/32, (3*exp(-
189/200)*sin(1071/1000))/2 + 189/400, (3*exp(-
381/400)*sin(2159/2000))/2 + 381/800, (3*exp(-24/25)*sin(136/125))/2 +
12/25, (3*exp(-387/400)*sin(2193/2000))/2 + 387/800, (3*exp(-
39/40)*sin(221/200))/2 + 39/80, (3*exp(-393/400)*sin(2227/2000))/2 +
393/800, (3*exp(-99/100)*sin(561/500))/2 + 99/200, (3*exp(-
399/400)*sin(2261/2000))/2 + 399/800, (3*exp(-
201/200)*sin(1139/1000))/2 + 201/400, (3*exp(-81/80)*sin(459/400))/2 +
81/160, (3*exp(-51/50)*sin(289/250))/2 + 51/100, (3*exp(-
411/400)*sin(2329/2000))/2 + 411/800, (3*exp(-
207/200)*sin(1173/1000))/2 + 207/400, (3*exp(-
417/400)*sin(2363/2000))/2 + 417/800, (3*exp(-21/20)*sin(119/100))/2 +
21/40, (3*exp(-423/400)*sin(2397/2000))/2 + 423/800, (3*exp(-
213/200)*sin(1207/1000))/2 + 213/400, (3*exp(-
429/400)*sin(2431/2000))/2 + 429/800, (3*exp(-27/25)*sin(153/125))/2 +
27/50, (3*exp(-87/80)*sin(493/400))/2 + 87/160, (3*exp(-
219/200)*sin(1241/1000))/2 + 219/400, (3*exp(-
441/400)*sin(2499/2000))/2 + 441/800, (3*exp(-111/100)*sin(629/500))/2
+ 111/200, (3*exp(-447/400)*sin(2533/2000))/2 + 447/800, (3*exp(-
9/8)*sin(51/40))/2 + 9/16, (3*exp(-453/400)*sin(2567/2000))/2 +
453/800, (3*exp(-57/50)*sin(323/250))/2 + 57/100, (3*exp(-
459/400)*sin(2601/2000))/2 + 459/800, (3*exp(-
231/200)*sin(1309/1000))/2 + 231/400, (3*exp(-93/80)*sin(527/400))/2 +
93/160, (3*exp(-117/100)*sin(663/500))/2 + 117/200, (3*exp(-
471/400)*sin(2669/2000))/2 + 471/800, (3*exp(-
237/200)*sin(1343/1000))/2 + 237/400, (3*exp(-
477/400)*sin(2703/2000))/2 + 477/800, (3*exp(-6/5)*sin(34/25))/2 +
3/5, (3*exp(-483/400)*sin(2737/2000))/2 + 483/800, (3*exp(-

243/200)*sin(1377/1000))/2 + 243/400, (3*exp(-
489/400)*sin(2771/2000))/2 + 489/800, (3*exp(-123/100)*sin(697/500))/2 +
123/200, (3*exp(-99/80)*sin(561/400))/2 + 99/160, (3*exp(-
249/200)*sin(1411/1000))/2 + 249/400, (3*exp(-
501/400)*sin(2839/2000))/2 + 501/800, (3*exp(-63/50)*sin(357/250))/2 +
63/100, (3*exp(-507/400)*sin(2873/2000))/2 + 507/800, (3*exp(-
51/40)*sin(289/200))/2 + 51/80, (3*exp(-513/400)*sin(2907/2000))/2 +
513/800, (3*exp(-129/100)*sin(731/500))/2 + 129/200, (3*exp(-
519/400)*sin(2941/2000))/2 + 519/800, (3*exp(-
261/200)*sin(1479/1000))/2 + 261/400, (3*exp(-21/16)*sin(119/80))/2 +
21/32, (3*exp(-33/25)*sin(187/125))/2 + 33/50, (3*exp(-
531/400)*sin(3009/2000))/2 + 531/800, (3*exp(-
267/200)*sin(1513/1000))/2 + 267/400, (3*exp(-
537/400)*sin(3043/2000))/2 + 537/800, (3*exp(-27/20)*sin(153/100))/2 +
27/40, (3*exp(-543/400)*sin(3077/2000))/2 + 543/800, (3*exp(-
273/200)*sin(1547/1000))/2 + 273/400, (3*exp(-
549/400)*sin(3111/2000))/2 + 549/800, (3*exp(-69/50)*sin(391/250))/2 +
69/100, (3*exp(-111/80)*sin(629/400))/2 + 111/160, (3*exp(-
279/200)*sin(1581/1000))/2 + 279/400, (3*exp(-
561/400)*sin(3179/2000))/2 + 561/800, (3*exp(-141/100)*sin(799/500))/2
+ 141/200, (3*exp(-567/400)*sin(3213/2000))/2 + 567/800, (3*exp(-
57/40)*sin(323/200))/2 + 57/80, (3*exp(-573/400)*sin(3247/2000))/2 +
573/800, (3*exp(-36/25)*sin(204/125))/2 + 18/25, (3*exp(-
579/400)*sin(3281/2000))/2 + 579/800, (3*exp(-
291/200)*sin(1649/1000))/2 + 291/400, (3*exp(-117/80)*sin(663/400))/2
+ 117/160, (3*exp(-147/100)*sin(833/500))/2 + 147/200, (3*exp(-
591/400)*sin(3349/2000))/2 + 591/800, (3*exp(-
297/200)*sin(1683/1000))/2 + 297/400, (3*exp(-
597/400)*sin(3383/2000))/2 + 597/800, (3*exp(-3/2)*sin(17/10))/2 +
3/4, (3*exp(-603/400)*sin(3417/2000))/2 + 603/800, (3*exp(-
303/200)*sin(1717/1000))/2 + 303/400, (3*exp(-
609/400)*sin(3451/2000))/2 + 609/800, (3*exp(-153/100)*sin(867/500))/2
+ 153/200, (3*exp(-123/80)*sin(697/400))/2 + 123/160, (3*exp(-
309/200)*sin(1751/1000))/2 + 309/400, (3*exp(-
621/400)*sin(3519/2000))/2 + 621/800, (3*exp(-39/25)*sin(221/125))/2 +
39/50, (3*exp(-627/400)*sin(3553/2000))/2 + 627/800, (3*exp(-
63/40)*sin(357/200))/2 + 63/80, (3*exp(-633/400)*sin(3587/2000))/2 +
633/800, (3*exp(-159/100)*sin(901/500))/2 + 159/200, (3*exp(-
639/400)*sin(3621/2000))/2 + 639/800, (3*exp(-
321/200)*sin(1819/1000))/2 + 321/400, (3*exp(-129/80)*sin(731/400))/2
+ 129/160, (3*exp(-81/50)*sin(459/250))/2 + 81/100, (3*exp(-
651/400)*sin(3689/2000))/2 + 651/800, (3*exp(-
327/200)*sin(1853/1000))/2 + 327/400, (3*exp(-
657/400)*sin(3723/2000))/2 + 657/800, (3*exp(-33/20)*sin(187/100))/2 +
33/40, (3*exp(-663/400)*sin(3757/2000))/2 + 663/800, (3*exp(-
333/200)*sin(1887/1000))/2 + 333/400, (3*exp(-
669/400)*sin(3791/2000))/2 + 669/800, (3*exp(-42/25)*sin(238/125))/2 +
21/25, (3*exp(-27/16)*sin(153/80))/2 + 27/32, (3*exp(-
339/200)*sin(1921/1000))/2 + 339/400, (3*exp(-
681/400)*sin(3859/2000))/2 + 681/800, (3*exp(-171/100)*sin(969/500))/2
+ 171/200, (3*exp(-687/400)*sin(3893/2000))/2 + 687/800, (3*exp(-
69/40)*sin(391/200))/2 + 69/80, (3*exp(-693/400)*sin(3927/2000))/2 +

$693/800, (3*\exp(-87/50)*\sin(493/250))/2 + 87/100, (3*\exp(-699/400)*\sin(3961/2000))/2 + 699/800, (3*\exp(-351/200)*\sin(1989/1000))/2 + 351/400, (3*\exp(-141/80)*\sin(799/400))/2 + 141/160, (3*\exp(-177/100)*\sin(1003/500))/2 + 177/200, (3*\exp(-711/400)*\sin(4029/2000))/2 + 711/800, (3*\exp(-357/200)*\sin(2023/1000))/2 + 357/400, (3*\exp(-717/400)*\sin(4063/2000))/2 + 717/800, (3*\exp(-9/5)*\sin(51/25))/2 + 9/10, (3*\exp(-723/400)*\sin(4097/2000))/2 + 723/800, (3*\exp(-363/200)*\sin(2057/1000))/2 + 363/400, (3*\exp(-729/400)*\sin(4131/2000))/2 + 729/800, (3*\exp(-183/100)*\sin(1037/500))/2 + 183/200, (3*\exp(-147/80)*\sin(833/400))/2 + 147/160, (3*\exp(-369/200)*\sin(2091/1000))/2 + 369/400, (3*\exp(-741/400)*\sin(4199/2000))/2 + 741/800, (3*\exp(-93/50)*\sin(527/250))/2 + 93/100, (3*\exp(-747/400)*\sin(4233/2000))/2 + 747/800, (3*\exp(-15/8)*\sin(17/8))/2 + 15/16]$

v =

$(51*\cos((17*t)/20)*\exp(-(3*t)/4))/40 - (9*\sin((17*t)/20)*\exp(-(3*t)/4))/8 + 3/8$

vn =

$[33/20, (51*\cos(17/2000)*\exp(-3/400))/40 - (9*\exp(-3/400)*\sin(17/2000))/8 + 3/8, (51*\cos(17/1000)*\exp(-3/200))/40 - (9*\exp(-3/200)*\sin(17/1000))/8 + 3/8, (51*\cos(51/2000)*\exp(-9/400))/40 - (9*\exp(-9/400)*\sin(51/2000))/8 + 3/8, (51*\cos(17/500)*\exp(-3/100))/40 - (9*\exp(-3/100)*\sin(17/500))/8 + 3/8, (51*\cos(17/400)*\exp(-3/80))/40 - (9*\exp(-3/80)*\sin(17/400))/8 + 3/8, (51*\cos(51/1000)*\exp(-9/200))/40 - (9*\exp(-9/200)*\sin(51/1000))/8 + 3/8, (51*\cos(119/2000)*\exp(-21/400))/40 - (9*\exp(-21/400)*\sin(119/2000))/8 + 3/8, (51*\cos(17/250)*\exp(-3/50))/40 - (9*\exp(-3/50)*\sin(17/250))/8 + 3/8, (51*\cos(153/2000)*\exp(-27/400))/40 - (9*\exp(-27/400)*\sin(153/2000))/8 + 3/8, (51*\cos(17/200)*\exp(-3/40))/40 - (9*\exp(-3/40)*\sin(17/200))/8 + 3/8, (51*\cos(187/2000)*\exp(-33/400))/40 - (9*\exp(-33/400)*\sin(187/2000))/8 + 3/8, (51*\cos(51/500)*\exp(-9/100))/40 - (9*\exp(-9/100)*\sin(51/500))/8 + 3/8, (51*\cos(221/2000)*\exp(-39/400))/40 - (9*\exp(-39/400)*\sin(221/2000))/8 + 3/8, (51*\cos(119/1000)*\exp(-21/200))/40 - (9*\exp(-21/200)*\sin(119/1000))/8 + 3/8, (51*\cos(51/400)*\exp(-9/80))/40 - (9*\exp(-9/80)*\sin(51/400))/8 + 3/8, (51*\cos(17/125)*\exp(-3/25))/40 - (9*\exp(-3/25)*\sin(17/125))/8 + 3/8, (51*\cos(289/2000)*\exp(-51/400))/40 - (9*\exp(-51/400)*\sin(289/2000))/8 + 3/8, (51*\cos(153/1000)*\exp(-27/200))/40 - (9*\exp(-27/200)*\sin(153/1000))/8 + 3/8, (51*\cos(323/2000)*\exp(-57/400))/40 - (9*\exp(-57/400)*\sin(323/2000))/8 + 3/8, (51*\cos(17/100)*\exp(-3/20))/40 - (9*\exp(-3/20)*\sin(17/100))/8 + 3/8, (51*\cos(357/2000)*\exp(-63/400))/40 - (9*\exp(-63/400)*\sin(357/2000))/8 + 3/8, (51*\cos(187/1000)*\exp(-33/200))/40 - (9*\exp(-33/200)*\sin(187/1000))/8 + 3/8, (51*\cos(391/2000)*\exp(-69/400))/40 - (9*\exp(-69/400)*\sin(391/2000))/8 + 3/8,$

$(51 \cdot \cos(51/250) \cdot \exp(-9/50))/40 - (9 \cdot \exp(-9/50) \cdot \sin(51/250))/8 + 3/8,$
 $(51 \cdot \cos(17/80) \cdot \exp(-3/16))/40 - (9 \cdot \exp(-3/16) \cdot \sin(17/80))/8 + 3/8,$
 $(51 \cdot \cos(221/1000) \cdot \exp(-39/200))/40 - (9 \cdot \exp(-39/200) \cdot \sin(221/1000))/8$
 $+ 3/8, (51 \cdot \cos(459/2000) \cdot \exp(-81/400))/40 - (9 \cdot \exp(-$
 $81/400) \cdot \sin(459/2000))/8 + 3/8, (51 \cdot \cos(119/500) \cdot \exp(-21/100))/40 -$
 $(9 \cdot \exp(-21/100) \cdot \sin(119/500))/8 + 3/8, (51 \cdot \cos(493/2000) \cdot \exp(-$
 $87/400))/40 - (9 \cdot \exp(-87/400) \cdot \sin(493/2000))/8 + 3/8,$
 $(51 \cdot \cos(51/200) \cdot \exp(-9/40))/40 - (9 \cdot \exp(-9/40) \cdot \sin(51/200))/8 + 3/8,$
 $(51 \cdot \cos(527/2000) \cdot \exp(-93/400))/40 - (9 \cdot \exp(-93/400) \cdot \sin(527/2000))/8$
 $+ 3/8, (51 \cdot \cos(34/125) \cdot \exp(-6/25))/40 - (9 \cdot \exp(-6/25) \cdot \sin(34/125))/8 +$
 $3/8, (51 \cdot \cos(561/2000) \cdot \exp(-99/400))/40 - (9 \cdot \exp(-$
 $99/400) \cdot \sin(561/2000))/8 + 3/8, (51 \cdot \cos(289/1000) \cdot \exp(-51/200))/40 -$
 $(9 \cdot \exp(-51/200) \cdot \sin(289/1000))/8 + 3/8, (51 \cdot \cos(119/400) \cdot \exp(-$
 $21/80))/40 - (9 \cdot \exp(-21/80) \cdot \sin(119/400))/8 + 3/8,$
 $(51 \cdot \cos(153/500) \cdot \exp(-27/100))/40 - (9 \cdot \exp(-27/100) \cdot \sin(153/500))/8 +$
 $3/8, (51 \cdot \cos(629/2000) \cdot \exp(-111/400))/40 - (9 \cdot \exp(-$
 $111/400) \cdot \sin(629/2000))/8 + 3/8, (51 \cdot \cos(323/1000) \cdot \exp(-57/200))/40 -$
 $(9 \cdot \exp(-57/200) \cdot \sin(323/1000))/8 + 3/8, (51 \cdot \cos(663/2000) \cdot \exp(-$
 $117/400))/40 - (9 \cdot \exp(-117/400) \cdot \sin(663/2000))/8 + 3/8,$
 $(51 \cdot \cos(17/50) \cdot \exp(-3/10))/40 - (9 \cdot \exp(-3/10) \cdot \sin(17/50))/8 + 3/8,$
 $(51 \cdot \cos(697/2000) \cdot \exp(-123/400))/40 - (9 \cdot \exp(-$
 $123/400) \cdot \sin(697/2000))/8 + 3/8, (51 \cdot \cos(357/1000) \cdot \exp(-63/200))/40 -$
 $(9 \cdot \exp(-63/200) \cdot \sin(357/1000))/8 + 3/8, (51 \cdot \cos(731/2000) \cdot \exp(-$
 $129/400))/40 - (9 \cdot \exp(-129/400) \cdot \sin(731/2000))/8 + 3/8,$
 $(51 \cdot \cos(187/500) \cdot \exp(-33/100))/40 - (9 \cdot \exp(-33/100) \cdot \sin(187/500))/8 +$
 $3/8, (51 \cdot \cos(153/400) \cdot \exp(-27/80))/40 - (9 \cdot \exp(-27/80) \cdot \sin(153/400))/8$
 $+ 3/8, (51 \cdot \cos(391/1000) \cdot \exp(-69/200))/40 - (9 \cdot \exp(-$
 $69/200) \cdot \sin(391/1000))/8 + 3/8, (51 \cdot \cos(799/2000) \cdot \exp(-141/400))/40 -$
 $(9 \cdot \exp(-141/400) \cdot \sin(799/2000))/8 + 3/8, (51 \cdot \cos(51/125) \cdot \exp(-$
 $9/25))/40 - (9 \cdot \exp(-9/25) \cdot \sin(51/125))/8 + 3/8,$
 $(51 \cdot \cos(833/2000) \cdot \exp(-147/400))/40 - (9 \cdot \exp(-$
 $147/400) \cdot \sin(833/2000))/8 + 3/8, (51 \cdot \cos(17/40) \cdot \exp(-3/8))/40 -$
 $(9 \cdot \exp(-3/8) \cdot \sin(17/40))/8 + 3/8, (51 \cdot \cos(867/2000) \cdot \exp(-153/400))/40$
 $- (9 \cdot \exp(-153/400) \cdot \sin(867/2000))/8 + 3/8, (51 \cdot \cos(221/500) \cdot \exp(-$
 $39/100))/40 - (9 \cdot \exp(-39/100) \cdot \sin(221/500))/8 + 3/8,$
 $(51 \cdot \cos(901/2000) \cdot \exp(-159/400))/40 - (9 \cdot \exp(-$
 $159/400) \cdot \sin(901/2000))/8 + 3/8, (51 \cdot \cos(459/1000) \cdot \exp(-81/200))/40 -$
 $(9 \cdot \exp(-81/200) \cdot \sin(459/1000))/8 + 3/8, (51 \cdot \cos(187/400) \cdot \exp(-$
 $33/80))/40 - (9 \cdot \exp(-33/80) \cdot \sin(187/400))/8 + 3/8,$
 $(51 \cdot \cos(119/250) \cdot \exp(-21/50))/40 - (9 \cdot \exp(-21/50) \cdot \sin(119/250))/8 +$
 $3/8, (51 \cdot \cos(969/2000) \cdot \exp(-171/400))/40 - (9 \cdot \exp(-$
 $171/400) \cdot \sin(969/2000))/8 + 3/8, (51 \cdot \cos(493/1000) \cdot \exp(-87/200))/40 -$
 $(9 \cdot \exp(-87/200) \cdot \sin(493/1000))/8 + 3/8, (51 \cdot \cos(1003/2000) \cdot \exp(-$
 $177/400))/40 - (9 \cdot \exp(-177/400) \cdot \sin(1003/2000))/8 + 3/8,$
 $(51 \cdot \cos(51/100) \cdot \exp(-9/20))/40 - (9 \cdot \exp(-9/20) \cdot \sin(51/100))/8 + 3/8,$
 $(51 \cdot \cos(1037/2000) \cdot \exp(-183/400))/40 - (9 \cdot \exp(-$
 $183/400) \cdot \sin(1037/2000))/8 + 3/8, (51 \cdot \cos(527/1000) \cdot \exp(-93/200))/40 -$
 $(9 \cdot \exp(-93/200) \cdot \sin(527/1000))/8 + 3/8, (51 \cdot \cos(1071/2000) \cdot \exp(-$
 $189/400))/40 - (9 \cdot \exp(-189/400) \cdot \sin(1071/2000))/8 + 3/8,$
 $(51 \cdot \cos(68/125) \cdot \exp(-12/25))/40 - (9 \cdot \exp(-12/25) \cdot \sin(68/125))/8 + 3/8,$
 $(51 \cdot \cos(221/400) \cdot \exp(-39/80))/40 - (9 \cdot \exp(-39/80) \cdot \sin(221/400))/8 +$
 $3/8, (51 \cdot \cos(561/1000) \cdot \exp(-99/200))/40 - (9 \cdot \exp(-$

$99/200) * \sin(561/1000)) / 8 + 3/8, (51 * \cos(1139/2000) * \exp(-201/400)) / 40 -$
 $(9 * \exp(-201/400) * \sin(1139/2000)) / 8 + 3/8, (51 * \cos(289/500) * \exp(-$
 $51/100)) / 40 - (9 * \exp(-51/100) * \sin(289/500)) / 8 + 3/8,$
 $(51 * \cos(1173/2000) * \exp(-207/400)) / 40 - (9 * \exp(-$
 $207/400) * \sin(1173/2000)) / 8 + 3/8, (51 * \cos(119/200) * \exp(-21/40)) / 40 -$
 $(9 * \exp(-21/40) * \sin(119/200)) / 8 + 3/8, (51 * \cos(1207/2000) * \exp(-$
 $213/400)) / 40 - (9 * \exp(-213/400) * \sin(1207/2000)) / 8 + 3/8,$
 $(51 * \cos(153/250) * \exp(-27/50)) / 40 - (9 * \exp(-27/50) * \sin(153/250)) / 8 +$
 $3/8, (51 * \cos(1241/2000) * \exp(-219/400)) / 40 - (9 * \exp(-$
 $219/400) * \sin(1241/2000)) / 8 + 3/8, (51 * \cos(629/1000) * \exp(-111/200)) / 40$
 $- (9 * \exp(-111/200) * \sin(629/1000)) / 8 + 3/8, (51 * \cos(51/80) * \exp(-$
 $9/16)) / 40 - (9 * \exp(-9/16) * \sin(51/80)) / 8 + 3/8, (51 * \cos(323/500) * \exp(-$
 $57/100)) / 40 - (9 * \exp(-57/100) * \sin(323/500)) / 8 + 3/8,$
 $(51 * \cos(1309/2000) * \exp(-231/400)) / 40 - (9 * \exp(-$
 $231/400) * \sin(1309/2000)) / 8 + 3/8, (51 * \cos(663/1000) * \exp(-117/200)) / 40$
 $- (9 * \exp(-117/200) * \sin(663/1000)) / 8 + 3/8, (51 * \cos(1343/2000) * \exp(-$
 $237/400)) / 40 - (9 * \exp(-237/400) * \sin(1343/2000)) / 8 + 3/8,$
 $(51 * \cos(17/25) * \exp(-3/5)) / 40 - (9 * \exp(-3/5) * \sin(17/25)) / 8 + 3/8,$
 $(51 * \cos(1377/2000) * \exp(-243/400)) / 40 - (9 * \exp(-$
 $243/400) * \sin(1377/2000)) / 8 + 3/8, (51 * \cos(697/1000) * \exp(-123/200)) / 40$
 $- (9 * \exp(-123/200) * \sin(697/1000)) / 8 + 3/8, (51 * \cos(1411/2000) * \exp(-$
 $249/400)) / 40 - (9 * \exp(-249/400) * \sin(1411/2000)) / 8 + 3/8,$
 $(51 * \cos(357/500) * \exp(-63/100)) / 40 - (9 * \exp(-63/100) * \sin(357/500)) / 8 +$
 $3/8, (51 * \cos(289/400) * \exp(-51/80)) / 40 - (9 * \exp(-51/80) * \sin(289/400)) / 8$
 $+ 3/8, (51 * \cos(731/1000) * \exp(-129/200)) / 40 - (9 * \exp(-$
 $129/200) * \sin(731/1000)) / 8 + 3/8, (51 * \cos(1479/2000) * \exp(-261/400)) / 40$
 $- (9 * \exp(-261/400) * \sin(1479/2000)) / 8 + 3/8, (51 * \cos(187/250) * \exp(-$
 $33/50)) / 40 - (9 * \exp(-33/50) * \sin(187/250)) / 8 + 3/8,$
 $(51 * \cos(1513/2000) * \exp(-267/400)) / 40 - (9 * \exp(-$
 $267/400) * \sin(1513/2000)) / 8 + 3/8, (51 * \cos(153/200) * \exp(-27/40)) / 40 -$
 $(9 * \exp(-27/40) * \sin(153/200)) / 8 + 3/8, (51 * \cos(1547/2000) * \exp(-$
 $273/400)) / 40 - (9 * \exp(-273/400) * \sin(1547/2000)) / 8 + 3/8,$
 $(51 * \cos(391/500) * \exp(-69/100)) / 40 - (9 * \exp(-69/100) * \sin(391/500)) / 8 +$
 $3/8, (51 * \cos(1581/2000) * \exp(-279/400)) / 40 - (9 * \exp(-$
 $279/400) * \sin(1581/2000)) / 8 + 3/8, (51 * \cos(799/1000) * \exp(-141/200)) / 40$
 $- (9 * \exp(-141/200) * \sin(799/1000)) / 8 + 3/8, (51 * \cos(323/400) * \exp(-$
 $57/80)) / 40 - (9 * \exp(-57/80) * \sin(323/400)) / 8 + 3/8,$
 $(51 * \cos(102/125) * \exp(-18/25)) / 40 - (9 * \exp(-18/25) * \sin(102/125)) / 8 +$
 $3/8, (51 * \cos(1649/2000) * \exp(-291/400)) / 40 - (9 * \exp(-$
 $291/400) * \sin(1649/2000)) / 8 + 3/8, (51 * \cos(833/1000) * \exp(-147/200)) / 40$
 $- (9 * \exp(-147/200) * \sin(833/1000)) / 8 + 3/8, (51 * \cos(1683/2000) * \exp(-$
 $297/400)) / 40 - (9 * \exp(-297/400) * \sin(1683/2000)) / 8 + 3/8,$
 $(51 * \cos(17/20) * \exp(-3/4)) / 40 - (9 * \exp(-3/4) * \sin(17/20)) / 8 + 3/8,$
 $(51 * \cos(1717/2000) * \exp(-303/400)) / 40 - (9 * \exp(-$
 $303/400) * \sin(1717/2000)) / 8 + 3/8, (51 * \cos(867/1000) * \exp(-153/200)) / 40$
 $- (9 * \exp(-153/200) * \sin(867/1000)) / 8 + 3/8, (51 * \cos(1751/2000) * \exp(-$
 $309/400)) / 40 - (9 * \exp(-309/400) * \sin(1751/2000)) / 8 + 3/8,$
 $(51 * \cos(221/250) * \exp(-39/50)) / 40 - (9 * \exp(-39/50) * \sin(221/250)) / 8 +$
 $3/8, (51 * \cos(357/400) * \exp(-63/80)) / 40 - (9 * \exp(-63/80) * \sin(357/400)) / 8$
 $+ 3/8, (51 * \cos(901/1000) * \exp(-159/200)) / 40 - (9 * \exp(-$
 $159/200) * \sin(901/1000)) / 8 + 3/8, (51 * \cos(1819/2000) * \exp(-321/400)) / 40$
 $- (9 * \exp(-321/400) * \sin(1819/2000)) / 8 + 3/8, (51 * \cos(459/500) * \exp(-$

$$\begin{aligned}
& 81/100)/40 - (9*\exp(-81/100)*\sin(459/500))/8 + 3/8, \\
& (51*\cos(1853/2000)*\exp(-327/400))/40 - (9*\exp(- \\
& 327/400)*\sin(1853/2000))/8 + 3/8, (51*\cos(187/200)*\exp(-33/40))/40 - \\
& (9*\exp(-33/40)*\sin(187/200))/8 + 3/8, (51*\cos(1887/2000)*\exp(- \\
& 333/400))/40 - (9*\exp(-333/400)*\sin(1887/2000))/8 + 3/8, \\
& (51*\cos(119/125)*\exp(-21/25))/40 - (9*\exp(-21/25)*\sin(119/125))/8 + \\
& 3/8, (51*\cos(1921/2000)*\exp(-339/400))/40 - (9*\exp(- \\
& 339/400)*\sin(1921/2000))/8 + 3/8, (51*\cos(969/1000)*\exp(-171/200))/40 \\
& - (9*\exp(-171/200)*\sin(969/1000))/8 + 3/8, (51*\cos(391/400)*\exp(- \\
& 69/80))/40 - (9*\exp(-69/80)*\sin(391/400))/8 + 3/8, \\
& (51*\cos(493/500)*\exp(-87/100))/40 - (9*\exp(-87/100)*\sin(493/500))/8 + \\
& 3/8, (51*\cos(1989/2000)*\exp(-351/400))/40 - (9*\exp(- \\
& 351/400)*\sin(1989/2000))/8 + 3/8, (51*\cos(1003/1000)*\exp(-177/200))/40 \\
& - (9*\exp(-177/200)*\sin(1003/1000))/8 + 3/8, (51*\cos(2023/2000)*\exp(- \\
& 357/400))/40 - (9*\exp(-357/400)*\sin(2023/2000))/8 + 3/8, \\
& (51*\cos(51/50)*\exp(-9/10))/40 - (9*\exp(-9/10)*\sin(51/50))/8 + 3/8, \\
& (51*\cos(2057/2000)*\exp(-363/400))/40 - (9*\exp(- \\
& 363/400)*\sin(2057/2000))/8 + 3/8, (51*\cos(1037/1000)*\exp(-183/200))/40 \\
& - (9*\exp(-183/200)*\sin(1037/1000))/8 + 3/8, (51*\cos(2091/2000)*\exp(- \\
& 369/400))/40 - (9*\exp(-369/400)*\sin(2091/2000))/8 + 3/8, \\
& (51*\cos(527/500)*\exp(-93/100))/40 - (9*\exp(-93/100)*\sin(527/500))/8 + \\
& 3/8, (51*\cos(17/16)*\exp(-15/16))/40 - (9*\exp(-15/16)*\sin(17/16))/8 + \\
& 3/8, (51*\cos(1071/1000)*\exp(-189/200))/40 - (9*\exp(- \\
& 189/200)*\sin(1071/1000))/8 + 3/8, (51*\cos(2159/2000)*\exp(-381/400))/40 \\
& - (9*\exp(-381/400)*\sin(2159/2000))/8 + 3/8, (51*\cos(136/125)*\exp(- \\
& 24/25))/40 - (9*\exp(-24/25)*\sin(136/125))/8 + 3/8, \\
& (51*\cos(2193/2000)*\exp(-387/400))/40 - (9*\exp(- \\
& 387/400)*\sin(2193/2000))/8 + 3/8, (51*\cos(221/200)*\exp(-39/40))/40 - \\
& (9*\exp(-39/40)*\sin(221/200))/8 + 3/8, (51*\cos(2227/2000)*\exp(- \\
& 393/400))/40 - (9*\exp(-393/400)*\sin(2227/2000))/8 + 3/8, \\
& (51*\cos(561/500)*\exp(-99/100))/40 - (9*\exp(-99/100)*\sin(561/500))/8 + \\
& 3/8, (51*\cos(2261/2000)*\exp(-399/400))/40 - (9*\exp(- \\
& 399/400)*\sin(2261/2000))/8 + 3/8, (51*\cos(1139/1000)*\exp(-201/200))/40 \\
& - (9*\exp(-201/200)*\sin(1139/1000))/8 + 3/8, (51*\cos(459/400)*\exp(- \\
& 81/80))/40 - (9*\exp(-81/80)*\sin(459/400))/8 + 3/8, \\
& (51*\cos(289/250)*\exp(-51/50))/40 - (9*\exp(-51/50)*\sin(289/250))/8 + \\
& 3/8, (51*\cos(2329/2000)*\exp(-411/400))/40 - (9*\exp(- \\
& 411/400)*\sin(2329/2000))/8 + 3/8, (51*\cos(1173/1000)*\exp(-207/200))/40 \\
& - (9*\exp(-207/200)*\sin(1173/1000))/8 + 3/8, (51*\cos(2363/2000)*\exp(- \\
& 417/400))/40 - (9*\exp(-417/400)*\sin(2363/2000))/8 + 3/8, \\
& (51*\cos(119/100)*\exp(-21/20))/40 - (9*\exp(-21/20)*\sin(119/100))/8 + \\
& 3/8, (51*\cos(2397/2000)*\exp(-423/400))/40 - (9*\exp(- \\
& 423/400)*\sin(2397/2000))/8 + 3/8, (51*\cos(1207/1000)*\exp(-213/200))/40 \\
& - (9*\exp(-213/200)*\sin(1207/1000))/8 + 3/8, (51*\cos(2431/2000)*\exp(- \\
& 429/400))/40 - (9*\exp(-429/400)*\sin(2431/2000))/8 + 3/8, \\
& (51*\cos(153/125)*\exp(-27/25))/40 - (9*\exp(-27/25)*\sin(153/125))/8 + \\
& 3/8, (51*\cos(493/400)*\exp(-87/80))/40 - (9*\exp(-87/80)*\sin(493/400))/8 \\
& + 3/8, (51*\cos(1241/1000)*\exp(-219/200))/40 - (9*\exp(- \\
& 219/200)*\sin(1241/1000))/8 + 3/8, (51*\cos(2499/2000)*\exp(-441/400))/40 \\
& - (9*\exp(-441/400)*\sin(2499/2000))/8 + 3/8, (51*\cos(629/500)*\exp(- \\
& 111/100))/40 - (9*\exp(-111/100)*\sin(629/500))/8 + 3/8, \\
& (51*\cos(2533/2000)*\exp(-447/400))/40 - (9*\exp(-
\end{aligned}$$

$447/400) * \sin(2533/2000)) / 8 + 3/8, (51 * \cos(51/40) * \exp(-9/8)) / 40 -$
 $(9 * \exp(-9/8) * \sin(51/40)) / 8 + 3/8, (51 * \cos(2567/2000) * \exp(-453/400)) / 40$
 $- (9 * \exp(-453/400) * \sin(2567/2000)) / 8 + 3/8, (51 * \cos(323/250) * \exp(-$
 $57/50)) / 40 - (9 * \exp(-57/50) * \sin(323/250)) / 8 + 3/8,$
 $(51 * \cos(2601/2000) * \exp(-459/400)) / 40 - (9 * \exp(-$
 $459/400) * \sin(2601/2000)) / 8 + 3/8, (51 * \cos(1309/1000) * \exp(-231/200)) / 40$
 $- (9 * \exp(-231/200) * \sin(1309/1000)) / 8 + 3/8, (51 * \cos(527/400) * \exp(-$
 $93/80)) / 40 - (9 * \exp(-93/80) * \sin(527/400)) / 8 + 3/8,$
 $(51 * \cos(663/500) * \exp(-117/100)) / 40 - (9 * \exp(-117/100) * \sin(663/500)) / 8$
 $+ 3/8, (51 * \cos(2669/2000) * \exp(-471/400)) / 40 - (9 * \exp(-$
 $471/400) * \sin(2669/2000)) / 8 + 3/8, (51 * \cos(1343/1000) * \exp(-237/200)) / 40$
 $- (9 * \exp(-237/200) * \sin(1343/1000)) / 8 + 3/8, (51 * \cos(2703/2000) * \exp(-$
 $477/400)) / 40 - (9 * \exp(-477/400) * \sin(2703/2000)) / 8 + 3/8,$
 $(51 * \cos(34/25) * \exp(-6/5)) / 40 - (9 * \exp(-6/5) * \sin(34/25)) / 8 + 3/8,$
 $(51 * \cos(2737/2000) * \exp(-483/400)) / 40 - (9 * \exp(-$
 $483/400) * \sin(2737/2000)) / 8 + 3/8, (51 * \cos(1377/1000) * \exp(-243/200)) / 40$
 $- (9 * \exp(-243/200) * \sin(1377/1000)) / 8 + 3/8, (51 * \cos(2771/2000) * \exp(-$
 $489/400)) / 40 - (9 * \exp(-489/400) * \sin(2771/2000)) / 8 + 3/8,$
 $(51 * \cos(697/500) * \exp(-123/100)) / 40 - (9 * \exp(-123/100) * \sin(697/500)) / 8$
 $+ 3/8, (51 * \cos(561/400) * \exp(-99/80)) / 40 - (9 * \exp(-$
 $99/80) * \sin(561/400)) / 8 + 3/8, (51 * \cos(1411/1000) * \exp(-249/200)) / 40 -$
 $(9 * \exp(-249/200) * \sin(1411/1000)) / 8 + 3/8, (51 * \cos(2839/2000) * \exp(-$
 $501/400)) / 40 - (9 * \exp(-501/400) * \sin(2839/2000)) / 8 + 3/8,$
 $(51 * \cos(357/250) * \exp(-63/50)) / 40 - (9 * \exp(-63/50) * \sin(357/250)) / 8 +$
 $3/8, (51 * \cos(2873/2000) * \exp(-507/400)) / 40 - (9 * \exp(-$
 $507/400) * \sin(2873/2000)) / 8 + 3/8, (51 * \cos(289/200) * \exp(-51/40)) / 40 -$
 $(9 * \exp(-51/40) * \sin(289/200)) / 8 + 3/8, (51 * \cos(2907/2000) * \exp(-$
 $513/400)) / 40 - (9 * \exp(-513/400) * \sin(2907/2000)) / 8 + 3/8,$
 $(51 * \cos(731/500) * \exp(-129/100)) / 40 - (9 * \exp(-129/100) * \sin(731/500)) / 8$
 $+ 3/8, (51 * \cos(2941/2000) * \exp(-519/400)) / 40 - (9 * \exp(-$
 $519/400) * \sin(2941/2000)) / 8 + 3/8, (51 * \cos(1479/1000) * \exp(-261/200)) / 40$
 $- (9 * \exp(-261/200) * \sin(1479/1000)) / 8 + 3/8, (51 * \cos(119/80) * \exp(-$
 $21/16)) / 40 - (9 * \exp(-21/16) * \sin(119/80)) / 8 + 3/8,$
 $(51 * \cos(187/125) * \exp(-33/25)) / 40 - (9 * \exp(-33/25) * \sin(187/125)) / 8 +$
 $3/8, (51 * \cos(3009/2000) * \exp(-531/400)) / 40 - (9 * \exp(-$
 $531/400) * \sin(3009/2000)) / 8 + 3/8, (51 * \cos(1513/1000) * \exp(-267/200)) / 40$
 $- (9 * \exp(-267/200) * \sin(1513/1000)) / 8 + 3/8, (51 * \cos(3043/2000) * \exp(-$
 $537/400)) / 40 - (9 * \exp(-537/400) * \sin(3043/2000)) / 8 + 3/8,$
 $(51 * \cos(153/100) * \exp(-27/20)) / 40 - (9 * \exp(-27/20) * \sin(153/100)) / 8 +$
 $3/8, (51 * \cos(3077/2000) * \exp(-543/400)) / 40 - (9 * \exp(-$
 $543/400) * \sin(3077/2000)) / 8 + 3/8, (51 * \cos(1547/1000) * \exp(-273/200)) / 40$
 $- (9 * \exp(-273/200) * \sin(1547/1000)) / 8 + 3/8, (51 * \cos(3111/2000) * \exp(-$
 $549/400)) / 40 - (9 * \exp(-549/400) * \sin(3111/2000)) / 8 + 3/8,$
 $(51 * \cos(391/250) * \exp(-69/50)) / 40 - (9 * \exp(-69/50) * \sin(391/250)) / 8 +$
 $3/8, (51 * \cos(629/400) * \exp(-111/80)) / 40 - (9 * \exp(-$
 $111/80) * \sin(629/400)) / 8 + 3/8, (51 * \cos(1581/1000) * \exp(-279/200)) / 40 -$
 $(9 * \exp(-279/200) * \sin(1581/1000)) / 8 + 3/8, (51 * \cos(3179/2000) * \exp(-$
 $561/400)) / 40 - (9 * \exp(-561/400) * \sin(3179/2000)) / 8 + 3/8,$
 $(51 * \cos(799/500) * \exp(-141/100)) / 40 - (9 * \exp(-141/100) * \sin(799/500)) / 8$
 $+ 3/8, (51 * \cos(3213/2000) * \exp(-567/400)) / 40 - (9 * \exp(-$
 $567/400) * \sin(3213/2000)) / 8 + 3/8, (51 * \cos(323/200) * \exp(-57/40)) / 40 -$
 $(9 * \exp(-57/40) * \sin(323/200)) / 8 + 3/8, (51 * \cos(3247/2000) * \exp(-$

$$\begin{aligned}
& 573/400)/40 - (9*\exp(-573/400)*\sin(3247/2000))/8 + 3/8, \\
& (51*\cos(204/125)*\exp(-36/25))/40 - (9*\exp(-36/25)*\sin(204/125))/8 + \\
& 3/8, (51*\cos(3281/2000)*\exp(-579/400))/40 - (9*\exp(- \\
& 579/400)*\sin(3281/2000))/8 + 3/8, (51*\cos(1649/1000)*\exp(-291/200))/40 \\
& - (9*\exp(-291/200)*\sin(1649/1000))/8 + 3/8, (51*\cos(663/400)*\exp(- \\
& 117/80))/40 - (9*\exp(-117/80)*\sin(663/400))/8 + 3/8, \\
& (51*\cos(833/500)*\exp(-147/100))/40 - (9*\exp(-147/100)*\sin(833/500))/8 \\
& + 3/8, (51*\cos(3349/2000)*\exp(-591/400))/40 - (9*\exp(- \\
& 591/400)*\sin(3349/2000))/8 + 3/8, (51*\cos(1683/1000)*\exp(-297/200))/40 \\
& - (9*\exp(-297/200)*\sin(1683/1000))/8 + 3/8, (51*\cos(3383/2000)*\exp(- \\
& 597/400))/40 - (9*\exp(-597/400)*\sin(3383/2000))/8 + 3/8, \\
& (51*\cos(17/10)*\exp(-3/2))/40 - (9*\exp(-3/2)*\sin(17/10))/8 + 3/8, \\
& (51*\cos(3417/2000)*\exp(-603/400))/40 - (9*\exp(- \\
& 603/400)*\sin(3417/2000))/8 + 3/8, (51*\cos(1717/1000)*\exp(-303/200))/40 \\
& - (9*\exp(-303/200)*\sin(1717/1000))/8 + 3/8, (51*\cos(3451/2000)*\exp(- \\
& 609/400))/40 - (9*\exp(-609/400)*\sin(3451/2000))/8 + 3/8, \\
& (51*\cos(867/500)*\exp(-153/100))/40 - (9*\exp(-153/100)*\sin(867/500))/8 \\
& + 3/8, (51*\cos(697/400)*\exp(-123/80))/40 - (9*\exp(- \\
& 123/80)*\sin(697/400))/8 + 3/8, (51*\cos(1751/1000)*\exp(-309/200))/40 - \\
& (9*\exp(-309/200)*\sin(1751/1000))/8 + 3/8, (51*\cos(3519/2000)*\exp(- \\
& 621/400))/40 - (9*\exp(-621/400)*\sin(3519/2000))/8 + 3/8, \\
& (51*\cos(221/125)*\exp(-39/25))/40 - (9*\exp(-39/25)*\sin(221/125))/8 + \\
& 3/8, (51*\cos(3553/2000)*\exp(-627/400))/40 - (9*\exp(- \\
& 627/400)*\sin(3553/2000))/8 + 3/8, (51*\cos(357/200)*\exp(-63/40))/40 - \\
& (9*\exp(-63/40)*\sin(357/200))/8 + 3/8, (51*\cos(3587/2000)*\exp(- \\
& 633/400))/40 - (9*\exp(-633/400)*\sin(3587/2000))/8 + 3/8, \\
& (51*\cos(901/500)*\exp(-159/100))/40 - (9*\exp(-159/100)*\sin(901/500))/8 \\
& + 3/8, (51*\cos(3621/2000)*\exp(-639/400))/40 - (9*\exp(- \\
& 639/400)*\sin(3621/2000))/8 + 3/8, (51*\cos(1819/1000)*\exp(-321/200))/40 \\
& - (9*\exp(-321/200)*\sin(1819/1000))/8 + 3/8, (51*\cos(731/400)*\exp(- \\
& 129/80))/40 - (9*\exp(-129/80)*\sin(731/400))/8 + 3/8, \\
& (51*\cos(459/250)*\exp(-81/50))/40 - (9*\exp(-81/50)*\sin(459/250))/8 + \\
& 3/8, (51*\cos(3689/2000)*\exp(-651/400))/40 - (9*\exp(- \\
& 651/400)*\sin(3689/2000))/8 + 3/8, (51*\cos(1853/1000)*\exp(-327/200))/40 \\
& - (9*\exp(-327/200)*\sin(1853/1000))/8 + 3/8, (51*\cos(3723/2000)*\exp(- \\
& 657/400))/40 - (9*\exp(-657/400)*\sin(3723/2000))/8 + 3/8, \\
& (51*\cos(187/100)*\exp(-33/20))/40 - (9*\exp(-33/20)*\sin(187/100))/8 + \\
& 3/8, (51*\cos(3757/2000)*\exp(-663/400))/40 - (9*\exp(- \\
& 663/400)*\sin(3757/2000))/8 + 3/8, (51*\cos(1887/1000)*\exp(-333/200))/40 \\
& - (9*\exp(-333/200)*\sin(1887/1000))/8 + 3/8, (51*\cos(3791/2000)*\exp(- \\
& 669/400))/40 - (9*\exp(-669/400)*\sin(3791/2000))/8 + 3/8, \\
& (51*\cos(238/125)*\exp(-42/25))/40 - (9*\exp(-42/25)*\sin(238/125))/8 + \\
& 3/8, (51*\cos(153/80)*\exp(-27/16))/40 - (9*\exp(-27/16)*\sin(153/80))/8 + \\
& 3/8, (51*\cos(1921/1000)*\exp(-339/200))/40 - (9*\exp(- \\
& 339/200)*\sin(1921/1000))/8 + 3/8, (51*\cos(3859/2000)*\exp(-681/400))/40 \\
& - (9*\exp(-681/400)*\sin(3859/2000))/8 + 3/8, (51*\cos(969/500)*\exp(- \\
& 171/100))/40 - (9*\exp(-171/100)*\sin(969/500))/8 + 3/8, \\
& (51*\cos(3893/2000)*\exp(-687/400))/40 - (9*\exp(- \\
& 687/400)*\sin(3893/2000))/8 + 3/8, (51*\cos(391/200)*\exp(-69/40))/40 - \\
& (9*\exp(-69/40)*\sin(391/200))/8 + 3/8, (51*\cos(3927/2000)*\exp(- \\
& 693/400))/40 - (9*\exp(-693/400)*\sin(3927/2000))/8 + 3/8, \\
& (51*\cos(493/250)*\exp(-87/50))/40 - (9*\exp(-87/50)*\sin(493/250))/8 +
\end{aligned}$$

$3/8, (51*\cos(3961/2000)*\exp(-699/400))/40 - (9*\exp(-699/400)*\sin(3961/2000))/8 + 3/8, (51*\cos(1989/1000)*\exp(-351/200))/40 - (9*\exp(-351/200)*\sin(1989/1000))/8 + 3/8, (51*\cos(799/400)*\exp(-141/80))/40 - (9*\exp(-141/80)*\sin(799/400))/8 + 3/8, (51*\cos(1003/500)*\exp(-177/100))/40 - (9*\exp(-177/100)*\sin(1003/500))/8 + 3/8, (51*\cos(4029/2000)*\exp(-711/400))/40 - (9*\exp(-711/400)*\sin(4029/2000))/8 + 3/8, (51*\cos(2023/1000)*\exp(-357/200))/40 - (9*\exp(-357/200)*\sin(2023/1000))/8 + 3/8, (51*\cos(4063/2000)*\exp(-717/400))/40 - (9*\exp(-717/400)*\sin(4063/2000))/8 + 3/8, (51*\cos(51/25)*\exp(-9/5))/40 - (9*\exp(-9/5)*\sin(51/25))/8 + 3/8, (51*\cos(4097/2000)*\exp(-723/400))/40 - (9*\exp(-723/400)*\sin(4097/2000))/8 + 3/8, (51*\cos(2057/1000)*\exp(-363/200))/40 - (9*\exp(-363/200)*\sin(2057/1000))/8 + 3/8, (51*\cos(4131/2000)*\exp(-729/400))/40 - (9*\exp(-729/400)*\sin(4131/2000))/8 + 3/8, (51*\cos(1037/500)*\exp(-183/100))/40 - (9*\exp(-183/100)*\sin(1037/500))/8 + 3/8, (51*\cos(833/400)*\exp(-147/80))/40 - (9*\exp(-147/80)*\sin(833/400))/8 + 3/8, (51*\cos(2091/1000)*\exp(-369/200))/40 - (9*\exp(-369/200)*\sin(2091/1000))/8 + 3/8, (51*\cos(4199/2000)*\exp(-741/400))/40 - (9*\exp(-741/400)*\sin(4199/2000))/8 + 3/8, (51*\cos(527/250)*\exp(-93/50))/40 - (9*\exp(-93/50)*\sin(527/250))/8 + 3/8, (51*\cos(4233/2000)*\exp(-747/400))/40 - (9*\exp(-747/400)*\sin(4233/2000))/8 + 3/8, (51*\cos(17/8)*\exp(-15/8))/40 - (9*\exp(-15/8)*\sin(17/8))/8 + 3/8]$

a =

$-(153*\cos((17*t)/20)*\exp(-(3*t)/4))/80 - (6*\sin((17*t)/20)*\exp(-(3*t)/4))/25$

an =

$[-153/80, -(153*\cos(17/2000)*\exp(-3/400))/80 - (6*\exp(-3/400)*\sin(17/2000))/25, -(153*\cos(17/1000)*\exp(-3/200))/80 - (6*\exp(-3/200)*\sin(17/1000))/25, -(153*\cos(51/2000)*\exp(-9/400))/80 - (6*\exp(-9/400)*\sin(51/2000))/25, -(153*\cos(17/500)*\exp(-3/100))/80 - (6*\exp(-3/100)*\sin(17/500))/25, -(153*\cos(17/400)*\exp(-3/80))/80 - (6*\exp(-3/80)*\sin(17/400))/25, -(153*\cos(51/1000)*\exp(-9/200))/80 - (6*\exp(-9/200)*\sin(51/1000))/25, -(153*\cos(119/2000)*\exp(-21/400))/80 - (6*\exp(-21/400)*\sin(119/2000))/25, -(153*\cos(17/250)*\exp(-3/50))/80 - (6*\exp(-3/50)*\sin(17/250))/25, -(153*\cos(153/2000)*\exp(-27/400))/80 - (6*\exp(-27/400)*\sin(153/2000))/25, -(153*\cos(17/200)*\exp(-3/40))/80 - (6*\exp(-3/40)*\sin(17/200))/25, -(153*\cos(187/2000)*\exp(-33/400))/80 - (6*\exp(-33/400)*\sin(187/2000))/25, -(153*\cos(51/500)*\exp(-9/100))/80 - (6*\exp(-9/100)*\sin(51/500))/25, -(153*\cos(221/2000)*\exp(-39/400))/80 - (6*\exp(-39/400)*\sin(221/2000))/25, -(153*\cos(119/1000)*\exp(-21/200))/80 - (6*\exp(-21/200)*\sin(119/1000))/25, -(153*\cos(51/400)*\exp(-9/80))/80 - (6*\exp(-9/80)*\sin(51/400))/25, -(153*\cos(17/125)*\exp(-3/25))/80 - (6*\exp(-3/25)*\sin(17/125))/25, -(153*\cos(289/2000)*\exp(-51/400))/80 -$

$(6*\exp(-51/400)*\sin(289/2000))/25, - (153*\cos(153/1000)*\exp(-27/200))/80 - (6*\exp(-27/200)*\sin(153/1000))/25, -$
 $(153*\cos(323/2000)*\exp(-57/400))/80 - (6*\exp(-57/400)*\sin(323/2000))/25, - (153*\cos(17/100)*\exp(-3/20))/80 -$
 $(6*\exp(-3/20)*\sin(17/100))/25, - (153*\cos(357/2000)*\exp(-63/400))/80 -$
 $(6*\exp(-63/400)*\sin(357/2000))/25, - (153*\cos(187/1000)*\exp(-33/200))/80 -$
 $(6*\exp(-33/200)*\sin(187/1000))/25, - (153*\cos(391/2000)*\exp(-69/400))/80 -$
 $(6*\exp(-69/400)*\sin(391/2000))/25, - (153*\cos(51/250)*\exp(-9/50))/80 -$
 $(6*\exp(-9/50)*\sin(51/250))/25, - (153*\cos(17/80)*\exp(-3/16))/80 -$
 $(6*\exp(-3/16)*\sin(17/80))/25, - (153*\cos(221/1000)*\exp(-39/200))/80 -$
 $(6*\exp(-39/200)*\sin(221/1000))/25, - (153*\cos(459/2000)*\exp(-81/400))/80 -$
 $(6*\exp(-81/400)*\sin(459/2000))/25, - (153*\cos(119/500)*\exp(-21/100))/80 -$
 $(6*\exp(-21/100)*\sin(119/500))/25, - (153*\cos(493/2000)*\exp(-87/400))/80 -$
 $(6*\exp(-87/400)*\sin(493/2000))/25, - (153*\cos(51/200)*\exp(-9/40))/80 -$
 $(6*\exp(-9/40)*\sin(51/200))/25, - (153*\cos(527/2000)*\exp(-93/400))/80 -$
 $(6*\exp(-93/400)*\sin(527/2000))/25, - (153*\cos(34/125)*\exp(-6/25))/80 -$
 $(6*\exp(-6/25)*\sin(34/125))/25, - (153*\cos(561/2000)*\exp(-99/400))/80 -$
 $(6*\exp(-99/400)*\sin(561/2000))/25, - (153*\cos(289/1000)*\exp(-51/200))/80 -$
 $(6*\exp(-51/200)*\sin(289/1000))/25, - (153*\cos(119/400)*\exp(-21/80))/80 -$
 $(6*\exp(-21/80)*\sin(119/400))/25, - (153*\cos(153/500)*\exp(-27/100))/80 -$
 $(6*\exp(-27/100)*\sin(153/500))/25, - (153*\cos(629/2000)*\exp(-111/400))/80 -$
 $(6*\exp(-111/400)*\sin(629/2000))/25, - (153*\cos(323/1000)*\exp(-57/200))/80 -$
 $(6*\exp(-57/200)*\sin(323/1000))/25, - (153*\cos(663/2000)*\exp(-117/400))/80 -$
 $(6*\exp(-117/400)*\sin(663/2000))/25, - (153*\cos(17/50)*\exp(-3/10))/80 -$
 $(6*\exp(-3/10)*\sin(17/50))/25, - (153*\cos(697/2000)*\exp(-123/400))/80 -$
 $(6*\exp(-123/400)*\sin(697/2000))/25, - (153*\cos(357/1000)*\exp(-63/200))/80 -$
 $(6*\exp(-63/200)*\sin(357/1000))/25, - (153*\cos(731/2000)*\exp(-129/400))/80 -$
 $(6*\exp(-129/400)*\sin(731/2000))/25, - (153*\cos(187/500)*\exp(-33/100))/80 -$
 $(6*\exp(-33/100)*\sin(187/500))/25, - (153*\cos(153/400)*\exp(-27/80))/80 -$
 $(6*\exp(-27/80)*\sin(153/400))/25, - (153*\cos(391/1000)*\exp(-69/200))/80 -$
 $(6*\exp(-69/200)*\sin(391/1000))/25, - (153*\cos(799/2000)*\exp(-141/400))/80 -$
 $(6*\exp(-141/400)*\sin(799/2000))/25, - (153*\cos(51/125)*\exp(-9/25))/80 -$
 $(6*\exp(-9/25)*\sin(51/125))/25, - (153*\cos(833/2000)*\exp(-147/400))/80 -$
 $(6*\exp(-147/400)*\sin(833/2000))/25, - (153*\cos(17/40)*\exp(-3/8))/80 -$
 $(6*\exp(-3/8)*\sin(17/40))/25, - (153*\cos(867/2000)*\exp(-153/400))/80 -$
 $(6*\exp(-153/400)*\sin(867/2000))/25, - (153*\cos(221/500)*\exp(-39/100))/80 -$
 $(6*\exp(-39/100)*\sin(221/500))/25, - (153*\cos(901/2000)*\exp(-159/400))/80 -$
 $(6*\exp(-159/400)*\sin(901/2000))/25, - (153*\cos(459/1000)*\exp(-81/200))/80 -$
 $(6*\exp(-81/200)*\sin(459/1000))/25, - (153*\cos(187/400)*\exp(-33/80))/80 -$
 $(6*\exp(-33/80)*\sin(187/400))/25, - (153*\cos(119/250)*\exp(-21/50))/80 -$
 $(6*\exp(-21/50)*\sin(119/250))/25, - (153*\cos(969/2000)*\exp(-171/400))/80 -$
 $(6*\exp(-171/400)*\sin(969/2000))/25, - (153*\cos(493/1000)*\exp(-87/200))/80 -$
 $(6*\exp(-87/200)*\sin(493/1000))/25, - (153*\cos(1003/2000)*\exp(-177/400))/80 -$
 $(6*\exp(-177/400)*\sin(1003/2000))/25, - (153*\cos(51/100)*\exp(-9/20))/80$

- (6*exp(-9/20)*sin(51/100))/25, - (153*cos(1037/2000)*exp(-183/400))/80 - (6*exp(-183/400)*sin(1037/2000))/25, - (153*cos(527/1000)*exp(-93/200))/80 - (6*exp(-93/200)*sin(527/1000))/25, - (153*cos(1071/2000)*exp(-189/400))/80 - (6*exp(-189/400)*sin(1071/2000))/25, - (153*cos(68/125)*exp(-12/25))/80 - (6*exp(-12/25)*sin(68/125))/25, - (153*cos(221/400)*exp(-39/80))/80 - (6*exp(-39/80)*sin(221/400))/25, - (153*cos(561/1000)*exp(-99/200))/80 - (6*exp(-99/200)*sin(561/1000))/25, - (153*cos(1139/2000)*exp(-201/400))/80 - (6*exp(-201/400)*sin(1139/2000))/25, - (153*cos(289/500)*exp(-51/100))/80 - (6*exp(-51/100)*sin(289/500))/25, - (153*cos(1173/2000)*exp(-207/400))/80 - (6*exp(-207/400)*sin(1173/2000))/25, - (153*cos(119/200)*exp(-21/40))/80 - (6*exp(-21/40)*sin(119/200))/25, - (153*cos(1207/2000)*exp(-213/400))/80 - (6*exp(-213/400)*sin(1207/2000))/25, - (153*cos(153/250)*exp(-27/50))/80 - (6*exp(-27/50)*sin(153/250))/25, - (153*cos(1241/2000)*exp(-219/400))/80 - (6*exp(-219/400)*sin(1241/2000))/25, - (153*cos(629/1000)*exp(-111/200))/80 - (6*exp(-111/200)*sin(629/1000))/25, - (153*cos(51/80)*exp(-9/16))/80 - (6*exp(-9/16)*sin(51/80))/25, - (153*cos(323/500)*exp(-57/100))/80 - (6*exp(-57/100)*sin(323/500))/25, - (153*cos(1309/2000)*exp(-231/400))/80 - (6*exp(-231/400)*sin(1309/2000))/25, - (153*cos(663/1000)*exp(-117/200))/80 - (6*exp(-117/200)*sin(663/1000))/25, - (153*cos(1343/2000)*exp(-237/400))/80 - (6*exp(-237/400)*sin(1343/2000))/25, - (153*cos(17/25)*exp(-3/5))/80 - (6*exp(-3/5)*sin(17/25))/25, - (153*cos(1377/2000)*exp(-243/400))/80 - (6*exp(-243/400)*sin(1377/2000))/25, - (153*cos(697/1000)*exp(-123/200))/80 - (6*exp(-123/200)*sin(697/1000))/25, - (153*cos(1411/2000)*exp(-249/400))/80 - (6*exp(-249/400)*sin(1411/2000))/25, - (153*cos(357/500)*exp(-63/100))/80 - (6*exp(-63/100)*sin(357/500))/25, - (153*cos(289/400)*exp(-51/80))/80 - (6*exp(-51/80)*sin(289/400))/25, - (153*cos(731/1000)*exp(-129/200))/80 - (6*exp(-129/200)*sin(731/1000))/25, - (153*cos(1479/2000)*exp(-261/400))/80 - (6*exp(-261/400)*sin(1479/2000))/25, - (153*cos(187/250)*exp(-33/50))/80 - (6*exp(-33/50)*sin(187/250))/25, - (153*cos(1513/2000)*exp(-267/400))/80 - (6*exp(-267/400)*sin(1513/2000))/25, - (153*cos(153/200)*exp(-27/40))/80 - (6*exp(-27/40)*sin(153/200))/25, - (153*cos(1547/2000)*exp(-273/400))/80 - (6*exp(-273/400)*sin(1547/2000))/25, - (153*cos(391/500)*exp(-69/100))/80 - (6*exp(-69/100)*sin(391/500))/25, - (153*cos(1581/2000)*exp(-279/400))/80 - (6*exp(-279/400)*sin(1581/2000))/25, - (153*cos(799/1000)*exp(-141/200))/80 - (6*exp(-141/200)*sin(799/1000))/25, - (153*cos(323/400)*exp(-57/80))/80 - (6*exp(-57/80)*sin(323/400))/25, - (153*cos(102/125)*exp(-18/25))/80 - (6*exp(-18/25)*sin(102/125))/25, - (153*cos(1649/2000)*exp(-291/400))/80 - (6*exp(-291/400)*sin(1649/2000))/25, - (153*cos(833/1000)*exp(-147/200))/80 - (6*exp(-147/200)*sin(833/1000))/25, - (153*cos(1683/2000)*exp(-297/400))/80 - (6*exp(-297/400)*sin(1683/2000))/25, - (153*cos(17/20)*exp(-3/4))/80 - (6*exp(-3/4)*sin(17/20))/25, - (153*cos(1717/2000)*exp(-303/400))/80 - (6*exp(-303/400)*sin(1717/2000))/25, - (153*cos(867/1000)*exp(-

$$\begin{aligned}
& 153/200)) / 80 - (6 * \exp(-153/200) * \sin(867/1000)) / 25, - \\
& (153 * \cos(1751/2000) * \exp(-309/400)) / 80 - (6 * \exp(- \\
& 309/400) * \sin(1751/2000)) / 25, - (153 * \cos(221/250) * \exp(-39/50)) / 80 - \\
& (6 * \exp(-39/50) * \sin(221/250)) / 25, - (153 * \cos(357/400) * \exp(-63/80)) / 80 - \\
& (6 * \exp(-63/80) * \sin(357/400)) / 25, - (153 * \cos(901/1000) * \exp(- \\
& 159/200)) / 80 - (6 * \exp(-159/200) * \sin(901/1000)) / 25, - \\
& (153 * \cos(1819/2000) * \exp(-321/400)) / 80 - (6 * \exp(- \\
& 321/400) * \sin(1819/2000)) / 25, - (153 * \cos(459/500) * \exp(-81/100)) / 80 - \\
& (6 * \exp(-81/100) * \sin(459/500)) / 25, - (153 * \cos(1853/2000) * \exp(- \\
& 327/400)) / 80 - (6 * \exp(-327/400) * \sin(1853/2000)) / 25, - \\
& (153 * \cos(187/200) * \exp(-33/40)) / 80 - (6 * \exp(-33/40) * \sin(187/200)) / 25, - \\
& (153 * \cos(1887/2000) * \exp(-333/400)) / 80 - (6 * \exp(- \\
& 333/400) * \sin(1887/2000)) / 25, - (153 * \cos(119/125) * \exp(-21/25)) / 80 - \\
& (6 * \exp(-21/25) * \sin(119/125)) / 25, - (153 * \cos(1921/2000) * \exp(- \\
& 339/400)) / 80 - (6 * \exp(-339/400) * \sin(1921/2000)) / 25, - \\
& (153 * \cos(969/1000) * \exp(-171/200)) / 80 - (6 * \exp(- \\
& 171/200) * \sin(969/1000)) / 25, - (153 * \cos(391/400) * \exp(-69/80)) / 80 - \\
& (6 * \exp(-69/80) * \sin(391/400)) / 25, - (153 * \cos(493/500) * \exp(-87/100)) / 80 \\
& - (6 * \exp(-87/100) * \sin(493/500)) / 25, - (153 * \cos(1989/2000) * \exp(- \\
& 351/400)) / 80 - (6 * \exp(-351/400) * \sin(1989/2000)) / 25, - \\
& (153 * \cos(1003/1000) * \exp(-177/200)) / 80 - (6 * \exp(- \\
& 177/200) * \sin(1003/1000)) / 25, - (153 * \cos(2023/2000) * \exp(-357/400)) / 80 - \\
& (6 * \exp(-357/400) * \sin(2023/2000)) / 25, - (153 * \cos(51/50) * \exp(-9/10)) / 80 \\
& - (6 * \exp(-9/10) * \sin(51/50)) / 25, - (153 * \cos(2057/2000) * \exp(- \\
& 363/400)) / 80 - (6 * \exp(-363/400) * \sin(2057/2000)) / 25, - \\
& (153 * \cos(1037/1000) * \exp(-183/200)) / 80 - (6 * \exp(- \\
& 183/200) * \sin(1037/1000)) / 25, - (153 * \cos(2091/2000) * \exp(-369/400)) / 80 - \\
& (6 * \exp(-369/400) * \sin(2091/2000)) / 25, - (153 * \cos(527/500) * \exp(- \\
& 93/100)) / 80 - (6 * \exp(-93/100) * \sin(527/500)) / 25, - \\
& (153 * \cos(17/16) * \exp(-15/16)) / 80 - (6 * \exp(-15/16) * \sin(17/16)) / 25, - \\
& (153 * \cos(1071/1000) * \exp(-189/200)) / 80 - (6 * \exp(- \\
& 189/200) * \sin(1071/1000)) / 25, - (153 * \cos(2159/2000) * \exp(-381/400)) / 80 - \\
& (6 * \exp(-381/400) * \sin(2159/2000)) / 25, - (153 * \cos(136/125) * \exp(- \\
& 24/25)) / 80 - (6 * \exp(-24/25) * \sin(136/125)) / 25, - \\
& (153 * \cos(2193/2000) * \exp(-387/400)) / 80 - (6 * \exp(- \\
& 387/400) * \sin(2193/2000)) / 25, - (153 * \cos(221/200) * \exp(-39/40)) / 80 - \\
& (6 * \exp(-39/40) * \sin(221/200)) / 25, - (153 * \cos(2227/2000) * \exp(- \\
& 393/400)) / 80 - (6 * \exp(-393/400) * \sin(2227/2000)) / 25, - \\
& (153 * \cos(561/500) * \exp(-99/100)) / 80 - (6 * \exp(-99/100) * \sin(561/500)) / 25, \\
& - (153 * \cos(2261/2000) * \exp(-399/400)) / 80 - (6 * \exp(- \\
& 399/400) * \sin(2261/2000)) / 25, - (153 * \cos(1139/1000) * \exp(-201/200)) / 80 - \\
& (6 * \exp(-201/200) * \sin(1139/1000)) / 25, - (153 * \cos(459/400) * \exp(- \\
& 81/80)) / 80 - (6 * \exp(-81/80) * \sin(459/400)) / 25, - \\
& (153 * \cos(289/250) * \exp(-51/50)) / 80 - (6 * \exp(-51/50) * \sin(289/250)) / 25, - \\
& (153 * \cos(2329/2000) * \exp(-411/400)) / 80 - (6 * \exp(- \\
& 411/400) * \sin(2329/2000)) / 25, - (153 * \cos(1173/1000) * \exp(-207/200)) / 80 - \\
& (6 * \exp(-207/200) * \sin(1173/1000)) / 25, - (153 * \cos(2363/2000) * \exp(- \\
& 417/400)) / 80 - (6 * \exp(-417/400) * \sin(2363/2000)) / 25, - \\
& (153 * \cos(119/100) * \exp(-21/20)) / 80 - (6 * \exp(-21/20) * \sin(119/100)) / 25, - \\
& (153 * \cos(2397/2000) * \exp(-423/400)) / 80 - (6 * \exp(- \\
& 423/400) * \sin(2397/2000)) / 25, - (153 * \cos(1207/1000) * \exp(-213/200)) / 80 - \\
& (6 * \exp(-213/200) * \sin(1207/1000)) / 25, - (153 * \cos(2431/2000) * \exp(-
\end{aligned}$$

429/400))/80 - (6*exp(-429/400)*sin(2431/2000))/25, -
(153*cos(153/125)*exp(-27/25))/80 - (6*exp(-27/25)*sin(153/125))/25, -
(153*cos(493/400)*exp(-87/80))/80 - (6*exp(-87/80)*sin(493/400))/25, -
(153*cos(1241/1000)*exp(-219/200))/80 - (6*exp(-
219/200)*sin(1241/1000))/25, - (153*cos(2499/2000)*exp(-441/400))/80 -
(6*exp(-441/400)*sin(2499/2000))/25, - (153*cos(629/500)*exp(-
111/100))/80 - (6*exp(-111/100)*sin(629/500))/25, -
(153*cos(2533/2000)*exp(-447/400))/80 - (6*exp(-
447/400)*sin(2533/2000))/25, - (153*cos(51/40)*exp(-9/8))/80 -
(6*exp(-9/8)*sin(51/40))/25, - (153*cos(2567/2000)*exp(-453/400))/80 -
(6*exp(-453/400)*sin(2567/2000))/25, - (153*cos(323/250)*exp(-
57/50))/80 - (6*exp(-57/50)*sin(323/250))/25, -
(153*cos(2601/2000)*exp(-459/400))/80 - (6*exp(-
459/400)*sin(2601/2000))/25, - (153*cos(1309/1000)*exp(-231/200))/80 -
(6*exp(-231/200)*sin(1309/1000))/25, - (153*cos(527/400)*exp(-
93/80))/80 - (6*exp(-93/80)*sin(527/400))/25, -
(153*cos(663/500)*exp(-117/100))/80 - (6*exp(-
117/100)*sin(663/500))/25, - (153*cos(2669/2000)*exp(-471/400))/80 -
(6*exp(-471/400)*sin(2669/2000))/25, - (153*cos(1343/1000)*exp(-
237/200))/80 - (6*exp(-237/200)*sin(1343/1000))/25, -
(153*cos(2703/2000)*exp(-477/400))/80 - (6*exp(-
477/400)*sin(2703/2000))/25, - (153*cos(34/25)*exp(-6/5))/80 -
(6*exp(-6/5)*sin(34/25))/25, - (153*cos(2737/2000)*exp(-483/400))/80 -
(6*exp(-483/400)*sin(2737/2000))/25, - (153*cos(1377/1000)*exp(-
243/200))/80 - (6*exp(-243/200)*sin(1377/1000))/25, -
(153*cos(2771/2000)*exp(-489/400))/80 - (6*exp(-
489/400)*sin(2771/2000))/25, - (153*cos(697/500)*exp(-123/100))/80 -
(6*exp(-123/100)*sin(697/500))/25, - (153*cos(561/400)*exp(-99/80))/80
- (6*exp(-99/80)*sin(561/400))/25, - (153*cos(1411/1000)*exp(-
249/200))/80 - (6*exp(-249/200)*sin(1411/1000))/25, -
(153*cos(2839/2000)*exp(-501/400))/80 - (6*exp(-
501/400)*sin(2839/2000))/25, - (153*cos(357/250)*exp(-63/50))/80 -
(6*exp(-63/50)*sin(357/250))/25, - (153*cos(2873/2000)*exp(-
507/400))/80 - (6*exp(-507/400)*sin(2873/2000))/25, -
(153*cos(289/200)*exp(-51/40))/80 - (6*exp(-51/40)*sin(289/200))/25, -
(153*cos(2907/2000)*exp(-513/400))/80 - (6*exp(-
513/400)*sin(2907/2000))/25, - (153*cos(731/500)*exp(-129/100))/80 -
(6*exp(-129/100)*sin(731/500))/25, - (153*cos(2941/2000)*exp(-
519/400))/80 - (6*exp(-519/400)*sin(2941/2000))/25, -
(153*cos(1479/1000)*exp(-261/200))/80 - (6*exp(-
261/200)*sin(1479/1000))/25, - (153*cos(119/80)*exp(-21/16))/80 -
(6*exp(-21/16)*sin(119/80))/25, - (153*cos(187/125)*exp(-33/25))/80 -
(6*exp(-33/25)*sin(187/125))/25, - (153*cos(3009/2000)*exp(-
531/400))/80 - (6*exp(-531/400)*sin(3009/2000))/25, -
(153*cos(1513/1000)*exp(-267/200))/80 - (6*exp(-
267/200)*sin(1513/1000))/25, - (153*cos(3043/2000)*exp(-537/400))/80 -
(6*exp(-537/400)*sin(3043/2000))/25, - (153*cos(153/100)*exp(-
27/20))/80 - (6*exp(-27/20)*sin(153/100))/25, -
(153*cos(3077/2000)*exp(-543/400))/80 - (6*exp(-
543/400)*sin(3077/2000))/25, - (153*cos(1547/1000)*exp(-273/200))/80 -
(6*exp(-273/200)*sin(1547/1000))/25, - (153*cos(3111/2000)*exp(-
549/400))/80 - (6*exp(-549/400)*sin(3111/2000))/25, -

(153*cos(391/250)*exp(-69/50))/80 - (6*exp(-69/50)*sin(391/250))/25, -
(153*cos(629/400)*exp(-111/80))/80 - (6*exp(-111/80)*sin(629/400))/25,
- (153*cos(1581/1000)*exp(-279/200))/80 - (6*exp(-
279/200)*sin(1581/1000))/25, - (153*cos(3179/2000)*exp(-561/400))/80 -
(6*exp(-561/400)*sin(3179/2000))/25, - (153*cos(799/500)*exp(-
141/100))/80 - (6*exp(-141/100)*sin(799/500))/25, -
(153*cos(3213/2000)*exp(-567/400))/80 - (6*exp(-
567/400)*sin(3213/2000))/25, - (153*cos(323/200)*exp(-57/40))/80 -
(6*exp(-57/40)*sin(323/200))/25, - (153*cos(3247/2000)*exp(-
573/400))/80 - (6*exp(-573/400)*sin(3247/2000))/25, -
(153*cos(204/125)*exp(-36/25))/80 - (6*exp(-36/25)*sin(204/125))/25, -
(153*cos(3281/2000)*exp(-579/400))/80 - (6*exp(-
579/400)*sin(3281/2000))/25, - (153*cos(1649/1000)*exp(-291/200))/80 -
(6*exp(-291/200)*sin(1649/1000))/25, - (153*cos(663/400)*exp(-
117/80))/80 - (6*exp(-117/80)*sin(663/400))/25, -
(153*cos(833/500)*exp(-147/100))/80 - (6*exp(-
147/100)*sin(833/500))/25, - (153*cos(3349/2000)*exp(-591/400))/80 -
(6*exp(-591/400)*sin(3349/2000))/25, - (153*cos(1683/1000)*exp(-
297/200))/80 - (6*exp(-297/200)*sin(1683/1000))/25, -
(153*cos(3383/2000)*exp(-597/400))/80 - (6*exp(-
597/400)*sin(3383/2000))/25, - (153*cos(17/10)*exp(-3/2))/80 -
(6*exp(-3/2)*sin(17/10))/25, - (153*cos(3417/2000)*exp(-603/400))/80 -
(6*exp(-603/400)*sin(3417/2000))/25, - (153*cos(1717/1000)*exp(-
303/200))/80 - (6*exp(-303/200)*sin(1717/1000))/25, -
(153*cos(3451/2000)*exp(-609/400))/80 - (6*exp(-
609/400)*sin(3451/2000))/25, - (153*cos(867/500)*exp(-153/100))/80 -
(6*exp(-153/100)*sin(867/500))/25, - (153*cos(697/400)*exp(-
123/80))/80 - (6*exp(-123/80)*sin(697/400))/25, -
(153*cos(1751/1000)*exp(-309/200))/80 - (6*exp(-
309/200)*sin(1751/1000))/25, - (153*cos(3519/2000)*exp(-621/400))/80 -
(6*exp(-621/400)*sin(3519/2000))/25, - (153*cos(221/125)*exp(-
39/25))/80 - (6*exp(-39/25)*sin(221/125))/25, -
(153*cos(3553/2000)*exp(-627/400))/80 - (6*exp(-
627/400)*sin(3553/2000))/25, - (153*cos(357/200)*exp(-63/40))/80 -
(6*exp(-63/40)*sin(357/200))/25, - (153*cos(3587/2000)*exp(-
633/400))/80 - (6*exp(-633/400)*sin(3587/2000))/25, -
(153*cos(901/500)*exp(-159/100))/80 - (6*exp(-
159/100)*sin(901/500))/25, - (153*cos(3621/2000)*exp(-639/400))/80 -
(6*exp(-639/400)*sin(3621/2000))/25, - (153*cos(1819/1000)*exp(-
321/200))/80 - (6*exp(-321/200)*sin(1819/1000))/25, -
(153*cos(731/400)*exp(-129/80))/80 - (6*exp(-129/80)*sin(731/400))/25,
- (153*cos(459/250)*exp(-81/50))/80 - (6*exp(-81/50)*sin(459/250))/25,
- (153*cos(3689/2000)*exp(-651/400))/80 - (6*exp(-
651/400)*sin(3689/2000))/25, - (153*cos(1853/1000)*exp(-327/200))/80 -
(6*exp(-327/200)*sin(1853/1000))/25, - (153*cos(3723/2000)*exp(-
657/400))/80 - (6*exp(-657/400)*sin(3723/2000))/25, -
(153*cos(187/100)*exp(-33/20))/80 - (6*exp(-33/20)*sin(187/100))/25, -
(153*cos(3757/2000)*exp(-663/400))/80 - (6*exp(-
663/400)*sin(3757/2000))/25, - (153*cos(1887/1000)*exp(-333/200))/80 -
(6*exp(-333/200)*sin(1887/1000))/25, - (153*cos(3791/2000)*exp(-
669/400))/80 - (6*exp(-669/400)*sin(3791/2000))/25, -
(153*cos(238/125)*exp(-42/25))/80 - (6*exp(-42/25)*sin(238/125))/25, -

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(153*cos(153/80)*exp(-27/16))/80 - (6*exp(-27/16)*sin(153/80))/25, -
(153*cos(1921/1000)*exp(-339/200))/80 - (6*exp(-
339/200)*sin(1921/1000))/25, - (153*cos(3859/2000)*exp(-681/400))/80 -
(6*exp(-681/400)*sin(3859/2000))/25, - (153*cos(969/500)*exp(-
171/100))/80 - (6*exp(-171/100)*sin(969/500))/25, -
(153*cos(3893/2000)*exp(-687/400))/80 - (6*exp(-
687/400)*sin(3893/2000))/25, - (153*cos(391/200)*exp(-69/40))/80 -
(6*exp(-69/40)*sin(391/200))/25, - (153*cos(3927/2000)*exp(-
693/400))/80 - (6*exp(-693/400)*sin(3927/2000))/25, -
(153*cos(493/250)*exp(-87/50))/80 - (6*exp(-87/50)*sin(493/250))/25, -
(153*cos(3961/2000)*exp(-699/400))/80 - (6*exp(-
699/400)*sin(3961/2000))/25, - (153*cos(1989/1000)*exp(-351/200))/80 -
(6*exp(-351/200)*sin(1989/1000))/25, - (153*cos(799/400)*exp(-
141/80))/80 - (6*exp(-141/80)*sin(799/400))/25, -
(153*cos(1003/500)*exp(-177/100))/80 - (6*exp(-
177/100)*sin(1003/500))/25, - (153*cos(4029/2000)*exp(-711/400))/80 -
(6*exp(-711/400)*sin(4029/2000))/25, - (153*cos(2023/1000)*exp(-
357/200))/80 - (6*exp(-357/200)*sin(2023/1000))/25, -
(153*cos(4063/2000)*exp(-717/400))/80 - (6*exp(-
717/400)*sin(4063/2000))/25, - (153*cos(51/25)*exp(-9/5))/80 -
(6*exp(-9/5)*sin(51/25))/25, - (153*cos(4097/2000)*exp(-723/400))/80 -
(6*exp(-723/400)*sin(4097/2000))/25, - (153*cos(2057/1000)*exp(-
363/200))/80 - (6*exp(-363/200)*sin(2057/1000))/25, -
(153*cos(4131/2000)*exp(-729/400))/80 - (6*exp(-
729/400)*sin(4131/2000))/25, - (153*cos(1037/500)*exp(-183/100))/80 -
(6*exp(-183/100)*sin(1037/500))/25, - (153*cos(833/400)*exp(-
147/80))/80 - (6*exp(-147/80)*sin(833/400))/25, -
(153*cos(2091/1000)*exp(-369/200))/80 - (6*exp(-
369/200)*sin(2091/1000))/25, - (153*cos(4199/2000)*exp(-741/400))/80 -
(6*exp(-741/400)*sin(4199/2000))/25, - (153*cos(527/250)*exp(-
93/50))/80 - (6*exp(-93/50)*sin(527/250))/25, -
(153*cos(4233/2000)*exp(-747/400))/80 - (6*exp(-
747/400)*sin(4233/2000))/25, - (153*cos(17/8)*exp(-15/8))/80 -
(6*exp(-15/8)*sin(17/8))/25]

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C)

```

1-commandwindow
2-clear
3-clc
4-close all
5-syms x
6-y=5*sin(5*x)^5
7-A=y^2
8-Aint=int(A)
9-Aintd=int(A,0,(22/7))
10-Aintdd=double(Aintd)

```

$$11 - V = (22/7) * A_{intdd}$$

$$y =$$

$$5 * \sin(5 * x)^5$$

$$A =$$

$$25 * \sin(5 * x)^{10}$$

$$A_{int} =$$

$$(1575 * x) / 256 - (525 * \sin(10 * x)) / 512 + (75 * \sin(20 * x)) / 256 - (75 * \sin(30 * x)) / 1024 + (25 * \sin(40 * x)) / 2048 - \sin(50 * x) / 1024$$

$$A_{intd} =$$

$$(75 * \sin(440/7)) / 256 - (525 * \sin(220/7)) / 512 - (75 * \sin(660/7)) / 1024 + (25 * \sin(880/7)) / 2048 - \sin(1100/7) / 1024 + 2475/128$$

$$A_{intdd} =$$

$$19.3282$$

$$V =$$

$$60.7456$$

>>