

ALAYEROGUN OLUWADEMILADE
Mechatronics Engineering
16/ENG05/010
ENG 281

QUESTION 4a

```
commandwindow  
clear clc close all  
A=[0,10,4,-2;-3,-17,1,2;1,1,1,0;8,-34,16,-10] b=[-4;2;6;4]  
x=inv(A)*b
```

Command window

A =

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

b =

```
-4  
2  
6  
4
```

x =

```
4.0000  
-0.0000  
2.0000
```

6.0000

QUESTION 4b

```
commandwindow
clear clc close all
syms t
d=1.5*exp(-0.75*t)*sin(0.85*t)+0.375*t tn=[0:0.01:2.5] dn=subs(d,tn) figure(1) plot(tn,dn)
xlabel('Time(min)') ylabel('Distance(m)') axis tight grid on grid minor v=diff(d)
vn=subs(v,tn) figure(2) plot(tn,vn) xlabel('Time(min)') ylabel('Velocity(m/min)') grid on grid
minor axis tight a=diff(v) an=subs(a,tn) figure(3) plot(tn,an) xlabel('Time(min)')
ylabel('Acceleration(m/min^2)') grid on grid minor axis tight figure(4) plot(tn,dn,tn,vn,tn,an)
xlabel('Time(min)') ylabel('Variable') axis tight grid on grid minor
legend('Distance(m)', 'Velocity(m/min)', 'Acceleration(m/min^2)')
```

Command window

d =

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

tn =

Columns 1 through 7

0 0.0100 0.0200 0.0300 0.0400 0.0500 0.0600

Columns 8 through 14

0.0700 0.0800 0.0900 0.1000 0.1100 0.1200 0.1300

Columns 15 through 21

0.1400 0.1500 0.1600 0.1700 0.1800 0.1900 0.2000

Columns 22 through 28

0.2100 0.2200 0.2300 0.2400 0.2500 0.2600 0.2700

Columns 29 through 35

0.2800 0.2900 0.3000 0.3100 0.3200 0.3300 0.3400 Columns 36 through 42

0.3500 0.3600 0.3700 0.3800 0.3900 0.4000 0.4100

Columns 43 through 49

0.4200 0.4300 0.4400 0.4500 0.4600 0.4700 0.4800

Columns 50 through 56

0.4900 0.5000 0.5100 0.5200 0.5300 0.5400 0.5500

Columns 57 through 63

0.5600 0.5700 0.5800 0.5900 0.6000 0.6100 0.6200

Columns 64 through 70

0.6300 0.6400 0.6500 0.6600 0.6700 0.6800 0.6900

Columns 71 through 77

0.7000 0.7100 0.7200 0.7300 0.7400 0.7500 0.7600

Columns 78 through 84

0.7700 0.7800 0.7900 0.8000 0.8100 0.8200 0.8300 Columns 85 through 91

0.8400 0.8500 0.8600 0.8700 0.8800 0.8900 0.9000

Columns 92 through 98

0.9100 0.9200 0.9300 0.9400 0.9500 0.9600 0.9700

Columns 99 through 105

0.9800 0.9900 1.0000 1.0100 1.0200 1.0300 1.0400

Columns 106 through 112

1.0500 1.0600 1.0700 1.0800 1.0900 1.1000 1.1100

Columns 113 through 119

1.1200 1.1300 1.1400 1.1500 1.1600 1.1700 1.1800

Columns 120 through 126

1.1900 1.2000 1.2100 1.2200 1.2300 1.2400 1.2500

Columns 127 through 133

1.2600 1.2700 1.2800 1.2900 1.3000 1.3100 1.3200

Columns 134 through 140

1.3300 1.3400 1.3500 1.3600 1.3700 1.3800 1.3900

Columns 141 through 147

1.4000 1.4100 1.4200 1.4300 1.4400 1.4500 1.4600

Columns 148 through 154

1.4700 1.4800 1.4900 1.5000 1.5100 1.5200 1.5300

Columns 155 through 161

1.5400 1.5500 1.5600 1.5700 1.5800 1.5900 1.6000

Columns 162 through 168

1.6100 1.6200 1.6300 1.6400 1.6500 1.6600 1.6700

Columns 169 through 175

1.6800 1.6900 1.7000 1.7100 1.7200 1.7300 1.7400

Columns 176 through 182

1.7500 1.7600 1.7700 1.7800 1.7900 1.8000 1.8100

Columns 183 through 189

1.8200 1.8300 1.8400 1.8500 1.8600 1.8700 1.8800

Columns 190 through 196

1.8900 1.9000 1.9100 1.9200 1.9300 1.9400 1.9500

Columns 197 through 203

1.9600 1.9700 1.9800 1.9900 2.0000 2.0100 2.0200

Columns 204 through 210

2.0300 2.0400 2.0500 2.0600 2.0700 2.0800 2.0900

Columns 211 through 217

2.1000 2.1100 2.1200 2.1300 2.1400 2.1500 2.1600

Columns 218 through 224

2.1700 2.1800 2.1900 2.2000 2.2100 2.2200 2.2300

Columns 225 through 231

2.2400 2.2500 2.2600 2.2700 2.2800 2.2900 2.3000

Columns 232 through 238

2.3100 2.3200 2.3300 2.3400 2.3500 2.3600 2.3700 Columns 239 through 245

2.3800 2.3900 2.4000 2.4100 2.4200 2.4300 2.4400

Columns 246 through 251

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(-

$147/400 * \sin(833/2000))/2 + 147/800, (3 * \exp(-3/8) * \sin(17/40))/2 + 3/16,$
 $(3 * \exp(153/400) * \sin(867/2000))/2 + 153/800, (3 * \exp(-39/100) * \sin(221/500))/2 + 39/200,$
 $(3 * \exp(159/400) * \sin(901/2000))/2 + 159/800, (3 * \exp(-81/200) * \sin(459/1000))/2 + 81/400,$
 $(3 * \exp(33/80) * \sin(187/400))/2 + 33/160, (3 * \exp(-21/50) * \sin(119/250))/2 + 21/100,$
 $(3 * \exp(171/400) * \sin(969/2000))/2 + 171/800, (3 * \exp(-87/200) * \sin(493/1000))/2 + 87/400, (3 * \exp(-$
 $177/400) * \sin(1003/2000))/2 + 177/800, (3 * \exp(-9/20) * \sin(51/100))/2 + 9/40,$
 $(3 * \exp(183/400) * \sin(1037/2000))/2 + 183/800, (3 * \exp(-93/200) * \sin(527/1000))/2 + 93/400, (3 * \exp(-$
 $189/400) * \sin(1071/2000))/2 + 189/800, (3 * \exp(-12/25) * \sin(68/125))/2 + 6/25,$
 $(3 * \exp(39/80) * \sin(221/400))/2 + 39/160, (3 * \exp(-99/200) * \sin(561/1000))/2 + 99/400,$
 $(3 * \exp(201/400) * \sin(1139/2000))/2 + 201/800, (3 * \exp(-51/100) * \sin(289/500))/2 + 51/200, (3 * \exp(-$
 $207/400) * \sin(1173/2000))/2 + 207/800, (3 * \exp(-21/40) * \sin(119/200))/2 + 21/80,$
 $(3 * \exp(213/400) * \sin(1207/2000))/2 + 213/800, (3 * \exp(-27/50) * \sin(153/250))/2 + 27/100,$
 $(3 * \exp(219/400) * \sin(1241/2000))/2 + 219/800, (3 * \exp(-111/200) * \sin(629/1000))/2 + 111/400, (3 * \exp(-$
 $9/16) * \sin(51/80))/2 + 9/32, (3 * \exp(-57/100) * \sin(323/500))/2 + 57/200, (3 * \exp(-$
 $231/400) * \sin(1309/2000))/2 + 231/800, (3 * \exp(-117/200) * \sin(663/1000))/2 + 117/400, (3 * \exp(-$
 $237/400) * \sin(1343/2000))/2 + 237/800, (3 * \exp(-3/5) * \sin(17/25))/2 + 3/10, (3 * \exp(-$
 $243/400) * \sin(1377/2000))/2 + 243/800, (3 * \exp(-123/200) * \sin(697/1000))/2 + 123/400, (3 * \exp(-$
 $249/400) * \sin(1411/2000))/2 + 249/800, (3 * \exp(-63/100) * \sin(357/500))/2 + 63/200, (3 * \exp(-$
 $51/80) * \sin(289/400))/2 + 51/160, (3 * \exp(-129/200) * \sin(731/1000))/2 + 129/400,$
 $(3 * \exp(261/400) * \sin(1479/2000))/2 + 261/800, (3 * \exp(-33/50) * \sin(187/250))/2 + 33/100, (3 * \exp(-$
 $267/400) * \sin(1513/2000))/2 + 267/800, (3 * \exp(-27/40) * \sin(153/200))/2 + 27/80,$
 $(3 * \exp(273/400) * \sin(1547/2000))/2 + 273/800, (3 * \exp(-69/100) * \sin(391/500))/2 + 69/200,$
 $(3 * \exp(279/400) * \sin(1581/2000))/2 + 279/800, (3 * \exp(-141/200) * \sin(799/1000))/2 + 141/400, (3 * \exp(-$
 $57/80) * \sin(323/400))/2 + 57/160, (3 * \exp(-18/25) * \sin(102/125))/2 + 9/25, (3 * \exp(-$
 $291/400) * \sin(1649/2000))/2 + 291/800, (3 * \exp(-147/200) * \sin(833/1000))/2 + 147/400, (3 * \exp(-$
 $297/400) * \sin(1683/2000))/2 + 297/800, (3 * \exp(-3/4) * \sin(17/20))/2 + 3/8, (3 * \exp(-$
 $303/400) * \sin(1717/2000))/2 + 303/800, (3 * \exp(-153/200) * \sin(867/1000))/2 + 153/400, (3 * \exp(-$
 $309/400) * \sin(1751/2000))/2 + 309/800, (3 * \exp(-39/50) * \sin(221/250))/2 + 39/100, (3 * \exp(-$
 $63/80) * \sin(357/400))/2 + 63/160, (3 * \exp(-159/200) * \sin(901/1000))/2 + 159/400,$
 $(3 * \exp(321/400) * \sin(1819/2000))/2 + 321/800, (3 * \exp(-81/100) * \sin(459/500))/2 + 81/200, (3 * \exp(-$
 $327/400) * \sin(1853/2000))/2 + 327/800, (3 * \exp(-33/40) * \sin(187/200))/2 + 33/80, (3 * \exp(-$
 $333/400) * \sin(1887/2000))/2 + 333/800, (3 * \exp(-21/25) * \sin(119/125))/2 + 21/50,$
 $(3 * \exp(339/400) * \sin(1921/2000))/2 + 339/800, (3 * \exp(-171/200) * \sin(969/1000))/2 + 171/400, (3 * \exp(-$
 $69/80) * \sin(391/400))/2 + 69/160, (3 * \exp(-87/100) * \sin(493/500))/2 + 87/200, (3 * \exp(-$
 $351/400) * \sin(1989/2000))/2 + 351/800, (3 * \exp(-177/200) * \sin(1003/1000))/2 + 177/400, (3 * \exp(-$
 $357/400) * \sin(2023/2000))/2 + 357/800, (3 * \exp(-9/10) * \sin(51/50))/2 + 9/20, (3 * \exp(-$
 $363/400) * \sin(2057/2000))/2 + 363/800, (3 * \exp(-183/200) * \sin(1037/1000))/2 + 183/400, (3 * \exp(-$
 $369/400) * \sin(2091/2000))/2 + 369/800, (3 * \exp(-93/100) * \sin(527/500))/2 + 93/200, (3 * \exp(-$
 $15/16) * \sin(17/16))/2 + 15/32, (3 * \exp(-189/200) * \sin(1071/1000))/2 + 189/400,$
 $(3 * \exp(381/400) * \sin(2159/2000))/2 + 381/800, (3 * \exp(-24/25) * \sin(136/125))/2 + 12/25, (3 * \exp(-$
 $387/400) * \sin(2193/2000))/2 + 387/800, (3 * \exp(-39/40) * \sin(221/200))/2 + 39/80,$
 $(3 * \exp(393/400) * \sin(2227/2000))/2 + 393/800, (3 * \exp(-99/100) * \sin(561/500))/2 + 99/200,$
 $(3 * \exp(399/400) * \sin(2261/2000))/2 + 399/800, (3 * \exp(-201/200) * \sin(1139/1000))/2 + 201/400, (3 * \exp(-$
 $81/80) * \sin(459/400))/2 + 81/160, (3 * \exp(-51/50) * \sin(289/250))/2 + 51/100, (3 * \exp(-$
 $411/400) * \sin(2329/2000))/2 + 411/800, (3 * \exp(-207/200) * \sin(1173/1000))/2 + 207/400, (3 * \exp(-$

$417/400 * \sin(2363/2000)/2 + 417/800, (3 * \exp(-21/20) * \sin(119/100))/2 + 21/40,$
 $(3 * \exp(423/400) * \sin(2397/2000))/2 + 423/800, (3 * \exp(-213/200) * \sin(1207/1000))/2 + 213/400,$
 $(3 * \exp(429/400) * \sin(2431/2000))/2 + 429/800, (3 * \exp(-27/25) * \sin(153/125))/2 + 27/50,$
 $(3 * \exp(87/80) * \sin(493/400))/2 + 87/160, (3 * \exp(-219/200) * \sin(1241/1000))/2 + 219/400,$
 $(3 * \exp(441/400) * \sin(2499/2000))/2 + 441/800, (3 * \exp(-111/100) * \sin(629/500))/2 + 111/200, (3 * \exp(-$
 $447/400) * \sin(2533/2000))/2 + 447/800, (3 * \exp(-9/8) * \sin(51/40))/2 + 9/16,$
 $(3 * \exp(453/400) * \sin(2567/2000))/2 + 453/800, (3 * \exp(-57/50) * \sin(323/250))/2 + 57/100,$
 $(3 * \exp(459/400) * \sin(2601/2000))/2 + 459/800, (3 * \exp(-231/200) * \sin(1309/1000))/2 + 231/400, (3 * \exp(-$
 $93/80) * \sin(527/400))/2 + 93/160, (3 * \exp(-117/100) * \sin(663/500))/2 + 117/200,$
 $(3 * \exp(471/400) * \sin(2669/2000))/2 + 471/800, (3 * \exp(-237/200) * \sin(1343/1000))/2 + 237/400, (3 * \exp(-$
 $477/400) * \sin(2703/2000))/2 + 477/800, (3 * \exp(-6/5) * \sin(34/25))/2 + 3/5, (3 * \exp(-$
 $483/400) * \sin(2737/2000))/2 + 483/800, (3 * \exp(-243/200) * \sin(1377/1000))/2 + 243/400, (3 * \exp(-$
 $489/400) * \sin(2771/2000))/2 + 489/800, (3 * \exp(-123/100) * \sin(697/500))/2 + 123/200, (3 * \exp(-$
 $99/80) * \sin(561/400))/2 + 99/160, (3 * \exp(-249/200) * \sin(1411/1000))/2 + 249/400,$
 $(3 * \exp(501/400) * \sin(2839/2000))/2 + 501/800, (3 * \exp(-63/50) * \sin(357/250))/2 + 63/100, (3 * \exp(-$
 $507/400) * \sin(2873/2000))/2 + 507/800, (3 * \exp(-51/40) * \sin(289/200))/2 + 51/80,$
 $(3 * \exp(513/400) * \sin(2907/2000))/2 + 513/800, (3 * \exp(-129/100) * \sin(731/500))/2 + 129/200,$
 $(3 * \exp(519/400) * \sin(2941/2000))/2 + 519/800, (3 * \exp(-261/200) * \sin(1479/1000))/2 + 261/400, (3 * \exp(-$
 $21/16) * \sin(119/80))/2 + 21/32, (3 * \exp(-33/25) * \sin(187/125))/2 + 33/50, (3 * \exp(-$
 $531/400) * \sin(3009/2000))/2 + 531/800, (3 * \exp(-267/200) * \sin(1513/1000))/2 + 267/400, (3 * \exp(-$
 $537/400) * \sin(3043/2000))/2 + 537/800, (3 * \exp(-27/20) * \sin(153/100))/2 + 27/40,$
 $(3 * \exp(543/400) * \sin(3077/2000))/2 + 543/800, (3 * \exp(-273/200) * \sin(1547/1000))/2 + 273/400, (3 * \exp(-$
 $549/400) * \sin(3111/2000))/2 + 549/800, (3 * \exp(-69/50) * \sin(391/250))/2 + 69/100,$
 $(3 * \exp(111/80) * \sin(629/400))/2 + 111/160, (3 * \exp(-279/200) * \sin(1581/1000))/2 + 279/400,$
 $(3 * \exp(561/400) * \sin(3179/2000))/2 + 561/800, (3 * \exp(-141/100) * \sin(799/500))/2 + 141/200, (3 * \exp(-$
 $567/400) * \sin(3213/2000))/2 + 567/800, (3 * \exp(-57/40) * \sin(323/200))/2 + 57/80, (3 * \exp(-$
 $573/400) * \sin(3247/2000))/2 + 573/800, (3 * \exp(-36/25) * \sin(204/125))/2 + 18/25,$
 $(3 * \exp(579/400) * \sin(3281/2000))/2 + 579/800, (3 * \exp(-291/200) * \sin(1649/1000))/2 + 291/400, (3 * \exp(-$
 $117/80) * \sin(663/400))/2 + 117/160, (3 * \exp(-147/100) * \sin(833/500))/2 + 147/200,$
 $(3 * \exp(591/400) * \sin(3349/2000))/2 + 591/800, (3 * \exp(-297/200) * \sin(1683/1000))/2 + 297/400, (3 * \exp(-$
 $597/400) * \sin(3383/2000))/2 + 597/800, (3 * \exp(-3/2) * \sin(17/10))/2 + 3/4, (3 * \exp(-$
 $603/400) * \sin(3417/2000))/2 + 603/800, (3 * \exp(-303/200) * \sin(1717/1000))/2 + 303/400, (3 * \exp(-$
 $609/400) * \sin(3451/2000))/2 + 609/800, (3 * \exp(-153/100) * \sin(867/500))/2 + 153/200, (3 * \exp(-$
 $123/80) * \sin(697/400))/2 + 123/160, (3 * \exp(-309/200) * \sin(1751/1000))/2 + 309/400, (3 * \exp(-$
 $621/400) * \sin(3519/2000))/2 + 621/800, (3 * \exp(-39/25) * \sin(221/125))/2 + 39/50, (3 * \exp(-$
 $627/400) * \sin(3553/2000))/2 + 627/800, (3 * \exp(-63/40) * \sin(357/200))/2 + 63/80,$
 $(3 * \exp(633/400) * \sin(3587/2000))/2 + 633/800, (3 * \exp(-159/100) * \sin(901/500))/2 + 159/200,$
 $(3 * \exp(639/400) * \sin(3621/2000))/2 + 639/800, (3 * \exp(-321/200) * \sin(1819/1000))/2 + 321/400, (3 * \exp(-$
 $129/80) * \sin(731/400))/2 + 129/160, (3 * \exp(-81/50) * \sin(459/250))/2 + 81/100,$
 $(3 * \exp(651/400) * \sin(3689/2000))/2 + 651/800, (3 * \exp(-327/200) * \sin(1853/1000))/2 + 327/400, (3 * \exp(-$
 $657/400) * \sin(3723/2000))/2 + 657/800, (3 * \exp(-33/20) * \sin(187/100))/2 + 33/40,$
 $(3 * \exp(663/400) * \sin(3757/2000))/2 + 663/800, (3 * \exp(-333/200) * \sin(1887/1000))/2 + 333/400, (3 * \exp(-$
 $669/400) * \sin(3791/2000))/2 + 669/800, (3 * \exp(-42/25) * \sin(238/125))/2 + 21/25, (3 * \exp(-$
 $27/16) * \sin(153/80))/2 + 27/32, (3 * \exp(-339/200) * \sin(1921/1000))/2 + 339/400,$
 $(3 * \exp(681/400) * \sin(3859/2000))/2 + 681/800, (3 * \exp(-171/100) * \sin(969/500))/2 + 171/200, (3 * \exp(-$

$$\begin{aligned}
& 687/400 * \sin(3893/2000) / 2 + 687/800, (3 * \exp(-69/40) * \sin(391/200)) / 2 + 69/80, \\
& (3 * \exp(693/400) * \sin(3927/2000)) / 2 + 693/800, (3 * \exp(-87/50) * \sin(493/250)) / 2 + 87/100, \\
& (3 * \exp(699/400) * \sin(3961/2000)) / 2 + 699/800, (3 * \exp(-351/200) * \sin(1989/1000)) / 2 + 351/400, (3 * \exp(- \\
& 141/80) * \sin(799/400)) / 2 + 141/160, (3 * \exp(-177/100) * \sin(1003/500)) / 2 + 177/200, \\
& (3 * \exp(711/400) * \sin(4029/2000)) / 2 + 711/800, (3 * \exp(-357/200) * \sin(2023/1000)) / 2 + 357/400, (3 * \exp(- \\
& 717/400) * \sin(4063/2000)) / 2 + 717/800, (3 * \exp(-9/5) * \sin(51/25)) / 2 + 9/10, (3 * \exp(- \\
& 723/400) * \sin(4097/2000)) / 2 + 723/800, (3 * \exp(-363/200) * \sin(2057/1000)) / 2 + 363/400, (3 * \exp(- \\
& 729/400) * \sin(4131/2000)) / 2 + 729/800, (3 * \exp(-183/100) * \sin(1037/500)) / 2 + 183/200, (3 * \exp(- \\
& 147/80) * \sin(833/400)) / 2 + 147/160, (3 * \exp(-369/200) * \sin(2091/1000)) / 2 + 369/400, (3 * \exp(- \\
& 741/400) * \sin(4199/2000)) / 2 + 741/800, (3 * \exp(-93/50) * \sin(527/250)) / 2 + 93/100, (3 * \exp(- \\
& 747/400) * \sin(4233/2000)) / 2 + 747/800, (3 * \exp(-15/8) * \sin(17/8)) / 2 + 15/16]
\end{aligned}$$

v =

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

vn =

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

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

$(51 \cdot \cos(68/125) \cdot \exp(-12/25))/40 - (9 \cdot \exp(-12/25) \cdot \sin(68/125))/8 + 3/8,$
 $(51 \cdot \cos(221/400) \cdot \exp(39/80))/40 - (9 \cdot \exp(-39/80) \cdot \sin(221/400))/8 + 3/8, (51 \cdot \cos(561/1000) \cdot \exp(-$
 $99/200))/40 - (9 \cdot \exp(-$
 $99/200) \cdot \sin(561/1000))/8 + 3/8, (51 \cdot \cos(1139/2000) \cdot \exp(-201/400))/40 - (9 \cdot \exp(-$
 $201/400) \cdot \sin(1139/2000))/8 + 3/8, (51 \cdot \cos(289/500) \cdot \exp(-51/100))/40 - (9 \cdot \exp(51/100) \cdot \sin(289/500))/8$
 $+ 3/8, (51 \cdot \cos(1173/2000) \cdot \exp(-207/400))/40 - (9 \cdot \exp(-$
 $207/400) \cdot \sin(1173/2000))/8 + 3/8, (51 \cdot \cos(119/200) \cdot \exp(-21/40))/40 - (9 \cdot \exp(-21/40) \cdot \sin(119/200))/8$
 $+ 3/8, (51 \cdot \cos(1207/2000) \cdot \exp(-213/400))/40 - (9 \cdot \exp(-213/400) \cdot \sin(1207/2000))/8 + 3/8,$
 $(51 \cdot \cos(153/250) \cdot \exp(-27/50))/40 - (9 \cdot \exp(-27/50) \cdot \sin(153/250))/8 + 3/8, (51 \cdot \cos(1241/2000) \cdot \exp(-$
 $219/400))/40 - (9 \cdot \exp(-219/400) \cdot \sin(1241/2000))/8 + 3/8, (51 \cdot \cos(629/1000) \cdot \exp(-111/200))/40 -$
 $(9 \cdot \exp(-111/200) \cdot \sin(629/1000))/8 + 3/8, (51 \cdot \cos(51/80) \cdot \exp(-9/16))/40 - (9 \cdot \exp(-9/16) \cdot \sin(51/80))/8$
 $+ 3/8, (51 \cdot \cos(323/500) \cdot \exp(-57/100))/40 - (9 \cdot \exp(-57/100) \cdot \sin(323/500))/8 + 3/8,$
 $(51 \cdot \cos(1309/2000) \cdot \exp(-231/400))/40 - (9 \cdot \exp(-231/400) \cdot \sin(1309/2000))/8 + 3/8,$
 $(51 \cdot \cos(663/1000) \cdot \exp(-117/200))/40 - (9 \cdot \exp(-117/200) \cdot \sin(663/1000))/8 + 3/8,$
 $(51 \cdot \cos(1343/2000) \cdot \exp(-237/400))/40 - (9 \cdot \exp(-237/400) \cdot \sin(1343/2000))/8 + 3/8,$
 $(51 \cdot \cos(17/25) \cdot \exp(-3/5))/40 - (9 \cdot \exp(-3/5) \cdot \sin(17/25))/8 + 3/8, (51 \cdot \cos(1377/2000) \cdot \exp(243/400))/40$
 $- (9 \cdot \exp(-243/400) \cdot \sin(1377/2000))/8 + 3/8, (51 \cdot \cos(697/1000) \cdot \exp(-123/200))/40 -$
 $(9 \cdot \exp(-123/200) \cdot \sin(697/1000))/8 + 3/8, (51 \cdot \cos(1411/2000) \cdot \exp(-249/400))/40 - (9 \cdot \exp(-$
 $249/400) \cdot \sin(1411/2000))/8 + 3/8, (51 \cdot \cos(357/500) \cdot \exp(-63/100))/40 - (9 \cdot \exp(-$
 $63/100) \cdot \sin(357/500))/8 + 3/8, (51 \cdot \cos(289/400) \cdot \exp(-51/80))/40 - (9 \cdot \exp(-51/80) \cdot \sin(289/400))/8 +$
 $3/8, (51 \cdot \cos(731/1000) \cdot \exp(-129/200))/40 - (9 \cdot \exp(-129/200) \cdot \sin(731/1000))/8 + 3/8,$
 $(51 \cdot \cos(1479/2000) \cdot \exp(-261/400))/40 - (9 \cdot \exp(-261/400) \cdot \sin(1479/2000))/8 + 3/8,$
 $(51 \cdot \cos(187/250) \cdot \exp(-33/50))/40 - (9 \cdot \exp(-33/50) \cdot \sin(187/250))/8 + 3/8,$
 $(51 \cdot \cos(1513/2000) \cdot \exp(267/400))/40 - (9 \cdot \exp(-267/400) \cdot \sin(1513/2000))/8 + 3/8,$
 $(51 \cdot \cos(153/200) \cdot \exp(-27/40))/40 - (9 \cdot \exp(-$
 $27/40) \cdot \sin(153/200))/8 + 3/8, (51 \cdot \cos(1547/2000) \cdot \exp(-273/400))/40 -$
 $(9 \cdot \exp(273/400) \cdot \sin(1547/2000))/8 + 3/8, (51 \cdot \cos(391/500) \cdot \exp(-69/100))/40 -$
 $(9 \cdot \exp(69/100) \cdot \sin(391/500))/8 + 3/8, (51 \cdot \cos(1581/2000) \cdot \exp(-279/400))/40 -$
 $(9 \cdot \exp(279/400) \cdot \sin(1581/2000))/8 + 3/8, (51 \cdot \cos(799/1000) \cdot \exp(-141/200))/40 - (9 \cdot \exp(-$
 $141/200) \cdot \sin(799/1000))/8 + 3/8, (51 \cdot \cos(323/400) \cdot \exp(-57/80))/40 - (9 \cdot \exp(-57/80) \cdot \sin(323/400))/8$
 $+ 3/8, (51 \cdot \cos(102/125) \cdot \exp(-18/25))/40 - (9 \cdot \exp(-18/25) \cdot \sin(102/125))/8 + 3/8,$
 $(51 \cdot \cos(1649/2000) \cdot \exp(-291/400))/40 - (9 \cdot \exp(-291/400) \cdot \sin(1649/2000))/8 + 3/8,$
 $(51 \cdot \cos(833/1000) \cdot \exp(-147/200))/40 - (9 \cdot \exp(-147/200) \cdot \sin(833/1000))/8 + 3/8,$
 $(51 \cdot \cos(1683/2000) \cdot \exp(-297/400))/40 - (9 \cdot \exp(-297/400) \cdot \sin(1683/2000))/8 + 3/8,$
 $(51 \cdot \cos(17/20) \cdot \exp(-3/4))/40 - (9 \cdot \exp(-3/4) \cdot \sin(17/20))/8 + 3/8, (51 \cdot \cos(1717/2000) \cdot \exp(303/400))/40$
 $- (9 \cdot \exp(-303/400) \cdot \sin(1717/2000))/8 + 3/8, (51 \cdot \cos(867/1000) \cdot \exp(-153/200))/40 -$
 $(9 \cdot \exp(-153/200) \cdot \sin(867/1000))/8 + 3/8, (51 \cdot \cos(1751/2000) \cdot \exp(-309/400))/40 - (9 \cdot \exp(-$
 $309/400) \cdot \sin(1751/2000))/8 + 3/8, (51 \cdot \cos(221/250) \cdot \exp(-39/50))/40 - (9 \cdot \exp(-39/50) \cdot \sin(221/250))/8$
 $+ 3/8, (51 \cdot \cos(357/400) \cdot \exp(-63/80))/40 - (9 \cdot \exp(-63/80) \cdot \sin(357/400))/8 + 3/8,$
 $(51 \cdot \cos(901/1000) \cdot \exp(-159/200))/40 - (9 \cdot \exp(-159/200) \cdot \sin(901/1000))/8 + 3/8,$
 $(51 \cdot \cos(1819/2000) \cdot \exp(-321/400))/40 - (9 \cdot \exp(-321/400) \cdot \sin(1819/2000))/8 + 3/8,$
 $(51 \cdot \cos(459/500) \cdot \exp(-81/100))/40 - (9 \cdot \exp(-81/100) \cdot \sin(459/500))/8 + 3/8, (51 \cdot \cos(1853/2000) \cdot \exp(-$
 $327/400))/40 - (9 \cdot \exp(-327/400) \cdot \sin(1853/2000))/8 + 3/8, (51 \cdot \cos(187/200) \cdot \exp(-33/40))/40 - (9 \cdot \exp(-$
 $33/40) \cdot \sin(187/200))/8 + 3/8, (51 \cdot \cos(1887/2000) \cdot \exp(-333/400))/40 - (9 \cdot \exp(-$
 $333/400) \cdot \sin(1887/2000))/8 + 3/8, (51 \cdot \cos(119/125) \cdot \exp(-21/25))/40 - (9 \cdot \exp(-21/25) \cdot \sin(119/125))/8$

$+ 3/8, (51*\cos(1921/2000)*\exp(-339/400))/40 - (9*\exp(-339/400)*\sin(1921/2000))/8 + 3/8,$
 $(51*\cos(969/1000)*\exp(-171/200))/40 - (9*\exp(-171/200)*\sin(969/1000))/8 + 3/8,$
 $(51*\cos(391/400)*\exp(-69/80))/40 - (9*\exp(-69/80)*\sin(391/400))/8 + 3/8,$
 $(51*\cos(493/500)*\exp(87/100))/40 - (9*\exp(-87/100)*\sin(493/500))/8 + 3/8, (51*\cos(1989/2000)*\exp(-$
 $351/400))/40 - (9*\exp(-$
 $351/400)*\sin(1989/2000))/8 + 3/8, (51*\cos(1003/1000)*\exp(-177/200))/40 - (9*\exp(-$
 $177/200)*\sin(1003/1000))/8 + 3/8, (51*\cos(2023/2000)*\exp(-357/400))/40 - (9*\exp(-$
 $357/400)*\sin(2023/2000))/8 + 3/8, (51*\cos(51/50)*\exp(-9/10))/40 - (9*\exp(-9/10)*\sin(51/50))/8 + 3/8,$
 $(51*\cos(2057/2000)*\exp(-363/400))/40 - (9*\exp(-363/400)*\sin(2057/2000))/8 + 3/8,$
 $(51*\cos(1037/1000)*\exp(-183/200))/40 - (9*\exp(-183/200)*\sin(1037/1000))/8 + 3/8,$
 $(51*\cos(2091/2000)*\exp(-369/400))/40 - (9*\exp(-369/400)*\sin(2091/2000))/8 + 3/8,$
 $(51*\cos(527/500)*\exp(-93/100))/40 - (9*\exp(-93/100)*\sin(527/500))/8 + 3/8, (51*\cos(17/16)*\exp(-$
 $15/16))/40 - (9*\exp(-15/16)*\sin(17/16))/8 + 3/8, (51*\cos(1071/1000)*\exp(-189/200))/40 -$
 $(9*\exp(189/200)*\sin(1071/1000))/8 + 3/8, (51*\cos(2159/2000)*\exp(-381/400))/40 - (9*\exp(-$
 $381/400)*\sin(2159/2000))/8 + 3/8, (51*\cos(136/125)*\exp(-24/25))/40 - (9*\exp(-24/25)*\sin(136/125))/8$
 $+ 3/8, (51*\cos(2193/2000)*\exp(-387/400))/40 - (9*\exp(-387/400)*\sin(2193/2000))/8 + 3/8,$
 $(51*\cos(221/200)*\exp(-39/40))/40 - (9*\exp(-39/40)*\sin(221/200))/8 + 3/8, (51*\cos(2227/2000)*\exp(-$
 $393/400))/40 - (9*\exp(-393/400)*\sin(2227/2000))/8 + 3/8, (51*\cos(561/500)*\exp(-99/100))/40 -$
 $(9*\exp(-99/100)*\sin(561/500))/8 + 3/8, (51*\cos(2261/2000)*\exp(-399/400))/40 - (9*\exp(-$
 $399/400)*\sin(2261/2000))/8 + 3/8, (51*\cos(1139/1000)*\exp(-201/200))/40 - (9*\exp(-$
 $201/200)*\sin(1139/1000))/8 + 3/8, (51*\cos(459/400)*\exp(-81/80))/40 - (9*\exp(-81/80)*\sin(459/400))/8$
 $+ 3/8, (51*\cos(289/250)*\exp(-51/50))/40 - (9*\exp(-51/50)*\sin(289/250))/8 + 3/8,$
 $(51*\cos(2329/2000)*\exp(-411/400))/40 - (9*\exp(-411/400)*\sin(2329/2000))/8 + 3/8,$
 $(51*\cos(1173/1000)*\exp(-207/200))/40 - (9*\exp(-207/200)*\sin(1173/1000))/8 + 3/8,$
 $(51*\cos(2363/2000)*\exp(-417/400))/40 - (9*\exp(-417/400)*\sin(2363/2000))/8 + 3/8,$
 $(51*\cos(119/100)*\exp(-21/20))/40 - (9*\exp(-21/20)*\sin(119/100))/8 + 3/8, (51*\cos(2397/2000)*\exp(-$
 $423/400))/40 - (9*\exp(-423/400)*\sin(2397/2000))/8 + 3/8, (51*\cos(1207/1000)*\exp(-213/200))/40 -$
 $(9*\exp(-213/200)*\sin(1207/1000))/8 + 3/8, (51*\cos(2431/2000)*\exp(-429/400))/40 - (9*\exp(-$
 $429/400)*\sin(2431/2000))/8 + 3/8, (51*\cos(153/125)*\exp(-27/25))/40 - (9*\exp(-27/25)*\sin(153/125))/8$
 $+ 3/8, (51*\cos(493/400)*\exp(-87/80))/40 - (9*\exp(-87/80)*\sin(493/400))/8 + 3/8,$
 $(51*\cos(1241/1000)*\exp(-219/200))/40 - (9*\exp(-219/200)*\sin(1241/1000))/8 + 3/8,$
 $(51*\cos(2499/2000)*\exp(-441/400))/40 - (9*\exp(-441/400)*\sin(2499/2000))/8 + 3/8,$
 $(51*\cos(629/500)*\exp(-111/100))/40 - (9*\exp(-111/100)*\sin(629/500))/8 + 3/8,$
 $(51*\cos(2533/2000)*\exp(-447/400))/40 - (9*\exp(-447/400)*\sin(2533/2000))/8 + 3/8,$
 $(51*\cos(51/40)*\exp(-9/8))/40 - (9*\exp(-9/8)*\sin(51/40))/8 + 3/8, (51*\cos(2567/2000)*\exp(-$
 $453/400))/40 - (9*\exp(-453/400)*\sin(2567/2000))/8 + 3/8, (51*\cos(323/250)*\exp(-57/50))/40 - (9*\exp(-$
 $57/50)*\sin(323/250))/8 + 3/8, (51*\cos(2601/2000)*\exp(-459/400))/40 -$
 $(9*\exp(459/400)*\sin(2601/2000))/8 + 3/8, (51*\cos(1309/1000)*\exp(-231/200))/40 - (9*\exp(-$
 $231/200)*\sin(1309/1000))/8 + 3/8, (51*\cos(527/400)*\exp(-93/80))/40 - (9*\exp(-93/80)*\sin(527/400))/8$
 $+ 3/8, (51*\cos(663/500)*\exp(-117/100))/40 - (9*\exp(-117/100)*\sin(663/500))/8 + 3/8,$
 $(51*\cos(2669/2000)*\exp(-471/400))/40 - (9*\exp(-471/400)*\sin(2669/2000))/8 + 3/8,$
 $(51*\cos(1343/1000)*\exp(-237/200))/40 - (9*\exp(-237/200)*\sin(1343/1000))/8 + 3/8,$
 $(51*\cos(2703/2000)*\exp(-477/400))/40 - (9*\exp(-477/400)*\sin(2703/2000))/8 + 3/8,$
 $(51*\cos(34/25)*\exp(-6/5))/40 - (9*\exp(-6/5)*\sin(34/25))/8 + 3/8, (51*\cos(2737/2000)*\exp(483/400))/40$
 $- (9*\exp(-483/400)*\sin(2737/2000))/8 + 3/8, (51*\cos(1377/1000)*\exp(-243/200))/40 -$

$(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(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 + 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 =

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

an =

$$\begin{aligned} & [-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(- \end{aligned}$$

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

$(153 \cdot \cos(187/250) \cdot \exp(-33/50))/80 - (6 \cdot \exp(-33/50) \cdot \sin(187/250))/25, -$
 $(153 \cdot \cos(1513/2000) \cdot \exp(267/400))/80 - (6 \cdot \exp(-267/400) \cdot \sin(1513/2000))/25, -$
 $(153 \cdot \cos(153/200) \cdot \exp(-27/40))/80 - (6 \cdot \exp(-$
 $27/40) \cdot \sin(153/200))/25, - (153 \cdot \cos(1547/2000) \cdot \exp(-273/400))/80 -$
 $(6 \cdot \exp(273/400) \cdot \sin(1547/2000))/25, - (153 \cdot \cos(391/500) \cdot \exp(-69/100))/80 -$
 $(6 \cdot \exp(69/100) \cdot \sin(391/500))/25, - (153 \cdot \cos(1581/2000) \cdot \exp(-279/400))/80 -$
 $(6 \cdot \exp(279/400) \cdot \sin(1581/2000))/25, - (153 \cdot \cos(799/1000) \cdot \exp(-141/200))/80 - (6 \cdot \exp(-$
 $141/200) \cdot \sin(799/1000))/25, - (153 \cdot \cos(323/400) \cdot \exp(-57/80))/80 - (6 \cdot \exp(-57/80) \cdot \sin(323/400))/25, -$
 $(153 \cdot \cos(102/125) \cdot \exp(-18/25))/80 - (6 \cdot \exp(-18/25) \cdot \sin(102/125))/25, - (153 \cdot \cos(1649/2000) \cdot \exp(-$
 $291/400))/80 - (6 \cdot \exp(-291/400) \cdot \sin(1649/2000))/25, - (153 \cdot \cos(833/1000) \cdot \exp(-147/200))/80 -$
 $(6 \cdot \exp(-147/200) \cdot \sin(833/1000))/25, - (153 \cdot \cos(1683/2000) \cdot \exp(-297/400))/80 -$
 $(6 \cdot \exp(297/400) \cdot \sin(1683/2000))/25, - (153 \cdot \cos(17/20) \cdot \exp(-3/4))/80 - (6 \cdot \exp(-3/4) \cdot \sin(17/20))/25, -$
 $(153 \cdot \cos(1717/2000) \cdot \exp(-303/400))/80 - (6 \cdot \exp(-303/400) \cdot \sin(1717/2000))/25, -$
 $(153 \cdot \cos(867/1000) \cdot \exp(-153/200))/80 - (6 \cdot \exp(-153/200) \cdot \sin(867/1000))/25, -$
 $(153 \cdot \cos(1751/2000) \cdot \exp(-309/400))/80 - (6 \cdot \exp(-309/400) \cdot \sin(1751/2000))/25, -$
 $(153 \cdot \cos(221/250) \cdot \exp(-39/50))/80 - (6 \cdot \exp(-39/50) \cdot \sin(221/250))/25, - (153 \cdot \cos(357/400) \cdot \exp(-$
 $63/80))/80 - (6 \cdot \exp(-63/80) \cdot \sin(357/400))/25, - (153 \cdot \cos(901/1000) \cdot \exp(-159/200))/80 - (6 \cdot \exp(-$
 $159/200) \cdot \sin(901/1000))/25, - (153 \cdot \cos(1819/2000) \cdot \exp(-321/400))/80 - (6 \cdot \exp(-$
 $321/400) \cdot \sin(1819/2000))/25, - (153 \cdot \cos(459/500) \cdot \exp(-81/100))/80 - (6 \cdot \exp(81/100) \cdot \sin(459/500))/25,$
 $- (153 \cdot \cos(1853/2000) \cdot \exp(-327/400))/80 - (6 \cdot \exp(-$
 $327/400) \cdot \sin(1853/2000))/25, - (153 \cdot \cos(187/200) \cdot \exp(-33/40))/80 - (6 \cdot \exp(-33/40) \cdot \sin(187/200))/25,$
 $- (153 \cdot \cos(1887/2000) \cdot \exp(-333/400))/80 - (6 \cdot \exp(-333/400) \cdot \sin(1887/2000))/25, -$
 $(153 \cdot \cos(119/125) \cdot \exp(-21/25))/80 - (6 \cdot \exp(-21/25) \cdot \sin(119/125))/25, - (153 \cdot \cos(1921/2000) \cdot \exp(-$
 $339/400))/80 - (6 \cdot \exp(-339/400) \cdot \sin(1921/2000))/25, - (153 \cdot \cos(969/1000) \cdot \exp(-171/200))/80 -$
 $(6 \cdot \exp(-171/200) \cdot \sin(969/1000))/25, - (153 \cdot \cos(391/400) \cdot \exp(-69/80))/80 - (6 \cdot \exp(-$
 $69/80) \cdot \sin(391/400))/25, - (153 \cdot \cos(493/500) \cdot \exp(-87/100))/80 - (6 \cdot \exp(-87/100) \cdot \sin(493/500))/25, -$
 $(153 \cdot \cos(1989/2000) \cdot \exp(-351/400))/80 - (6 \cdot \exp(-351/400) \cdot \sin(1989/2000))/25, -$
 $(153 \cdot \cos(1003/1000) \cdot \exp(-177/200))/80 - (6 \cdot \exp(-177/200) \cdot \sin(1003/1000))/25, -$
 $(153 \cdot \cos(2023/2000) \cdot \exp(-357/400))/80 - (6 \cdot \exp(-357/400) \cdot \sin(2023/2000))/25, -$
 $(153 \cdot \cos(51/50) \cdot \exp(-9/10))/80 - (6 \cdot \exp(-9/10) \cdot \sin(51/50))/25, -$
 $(153 \cdot \cos(2057/2000) \cdot \exp(363/400))/80 - (6 \cdot \exp(-363/400) \cdot \sin(2057/2000))/25, -$
 $(153 \cdot \cos(1037/1000) \cdot \exp(-183/200))/80 -$
 $(6 \cdot \exp(-183/200) \cdot \sin(1037/1000))/25, - (153 \cdot \cos(2091/2000) \cdot \exp(-369/400))/80 - (6 \cdot \exp(-$
 $369/400) \cdot \sin(2091/2000))/25, - (153 \cdot \cos(527/500) \cdot \exp(-93/100))/80 - (6 \cdot \exp(-$
 $93/100) \cdot \sin(527/500))/25, - (153 \cdot \cos(17/16) \cdot \exp(-15/16))/80 - (6 \cdot \exp(-15/16) \cdot \sin(17/16))/25, -$
 $(153 \cdot \cos(1071/1000) \cdot \exp(-189/200))/80 - (6 \cdot \exp(-189/200) \cdot \sin(1071/1000))/25, -$
 $(153 \cdot \cos(2159/2000) \cdot \exp(-381/400))/80 - (6 \cdot \exp(-381/400) \cdot \sin(2159/2000))/25, -$
 $(153 \cdot \cos(136/125) \cdot \exp(-24/25))/80 - (6 \cdot \exp(-24/25) \cdot \sin(136/125))/25, -$
 $(153 \cdot \cos(2193/2000) \cdot \exp(387/400))/80 - (6 \cdot \exp(-387/400) \cdot \sin(2193/2000))/25, -$
 $(153 \cdot \cos(221/200) \cdot \exp(-39/40))/80 - (6 \cdot \exp(-$
 $39/40) \cdot \sin(221/200))/25, - (153 \cdot \cos(2227/2000) \cdot \exp(-393/400))/80 -$
 $(6 \cdot \exp(393/400) \cdot \sin(2227/2000))/25, - (153 \cdot \cos(561/500) \cdot \exp(-99/100))/80 -$
 $(6 \cdot \exp(99/100) \cdot \sin(561/500))/25, - (153 \cdot \cos(2261/2000) \cdot \exp(-399/400))/80 -$
 $(6 \cdot \exp(399/400) \cdot \sin(2261/2000))/25, - (153 \cdot \cos(1139/1000) \cdot \exp(-201/200))/80 - (6 \cdot \exp(-$
 $201/200) \cdot \sin(1139/1000))/25, - (153 \cdot \cos(459/400) \cdot \exp(-81/80))/80 - (6 \cdot \exp(-81/80) \cdot \sin(459/400))/25,$

- (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(-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, -

$(153 \cdot \cos(391/250) \cdot \exp(-69/50))/80 - (6 \cdot \exp(-69/50) \cdot \sin(391/250))/25, -$
 $(153 \cdot \cos(629/400) \cdot \exp(111/80))/80 - (6 \cdot \exp(-111/80) \cdot \sin(629/400))/25, - (153 \cdot \cos(1581/1000) \cdot \exp(-$
 $279/200))/80 - (6 \cdot \exp(-$
 $279/200) \cdot \sin(1581/1000))/25, - (153 \cdot \cos(3179/2000) \cdot \exp(-561/400))/80 - (6 \cdot \exp(-$
 $561/400) \cdot \sin(3179/2000))/25, - (153 \cdot \cos(799/500) \cdot \exp(-141/100))/80 -$
 $(6 \cdot \exp(141/100) \cdot \sin(799/500))/25, - (153 \cdot \cos(3213/2000) \cdot \exp(-567/400))/80 - (6 \cdot \exp(-$
 $567/400) \cdot \sin(3213/2000))/25, - (153 \cdot \cos(323/200) \cdot \exp(-57/40))/80 - (6 \cdot \exp(-57/40) \cdot \sin(323/200))/25,$
 $- (153 \cdot \cos(3247/2000) \cdot \exp(-573/400))/80 - (6 \cdot \exp(-573/400) \cdot \sin(3247/2000))/25, -$
 $(153 \cdot \cos(204/125) \cdot \exp(-36/25))/80 - (6 \cdot \exp(-36/25) \cdot \sin(204/125))/25, - (153 \cdot \cos(3281/2000) \cdot \exp(-$
 $579/400))/80 - (6 \cdot \exp(-579/400) \cdot \sin(3281/2000))/25, - (153 \cdot \cos(1649/1000) \cdot \exp(-291/200))/80 -$
 $(6 \cdot \exp(-291/200) \cdot \sin(1649/1000))/25, - (153 \cdot \cos(663/400) \cdot \exp(-117/80))/80 - (6 \cdot \exp(-$
 $117/80) \cdot \sin(663/400))/25, - (153 \cdot \cos(833/500) \cdot \exp(-147/100))/80 - (6 \cdot \exp(147/100) \cdot \sin(833/500))/25, -$
 $(153 \cdot \cos(3349/2000) \cdot \exp(-591/400))/80 - (6 \cdot \exp(591/400) \cdot \sin(3349/2000))/25, -$
 $(153 \cdot \cos(1683/1000) \cdot \exp(-297/200))/80 - (6 \cdot \exp(-$
 $297/200) \cdot \sin(1683/1000))/25, - (153 \cdot \cos(3383/2000) \cdot \exp(-597/400))/80 - (6 \cdot \exp(-$
 $597/400) \cdot \sin(3383/2000))/25, - (153 \cdot \cos(17/10) \cdot \exp(-3/2))/80 - (6 \cdot \exp(-3/2) \cdot \sin(17/10))/25, -$
 $(153 \cdot \cos(3417/2000) \cdot \exp(-603/400))/80 - (6 \cdot \exp(-603/400) \cdot \sin(3417/2000))/25, -$
 $(153 \cdot \cos(1717/1000) \cdot \exp(-303/200))/80 - (6 \cdot \exp(-303/200) \cdot \sin(1717/1000))/25, -$
 $(153 \cdot \cos(3451/2000) \cdot \exp(-609/400))/80 - (6 \cdot \exp(-609/400) \cdot \sin(3451/2000))/25, -$
 $(153 \cdot \cos(867/500) \cdot \exp(-153/100))/80 - (6 \cdot \exp(-153/100) \cdot \sin(867/500))/25, - (153 \cdot \cos(697/400) \cdot \exp(-$
 $123/80))/80 - (6 \cdot \exp(-123/80) \cdot \sin(697/400))/25, - (153 \cdot \cos(1751/1000) \cdot \exp(-309/200))/80 - (6 \cdot \exp(-$
 $309/200) \cdot \sin(1751/1000))/25, - (153 \cdot \cos(3519/2000) \cdot \exp(-621/400))/80 - (6 \cdot \exp(-$
 $621/400) \cdot \sin(3519/2000))/25, - (153 \cdot \cos(221/125) \cdot \exp(-39/25))/80 - (6 \cdot \exp(-39/25) \cdot \sin(221/125))/25,$
 $- (153 \cdot \cos(3553/2000) \cdot \exp(-627/400))/80 - (6 \cdot \exp(-627/400) \cdot \sin(3553/2000))/25, -$
 $(153 \cdot \cos(357/200) \cdot \exp(-63/40))/80 - (6 \cdot \exp(-63/40) \cdot \sin(357/200))/25, -$
 $(153 \cdot \cos(3587/2000) \cdot \exp(633/400))/80 - (6 \cdot \exp(-633/400) \cdot \sin(3587/2000))/25, -$
 $(153 \cdot \cos(901/500) \cdot \exp(-159/100))/80 - (6 \cdot \exp(159/100) \cdot \sin(901/500))/25, -$
 $(153 \cdot \cos(3621/2000) \cdot \exp(-639/400))/80 - (6 \cdot \exp(639/400) \cdot \sin(3621/2000))/25, -$
 $(153 \cdot \cos(1819/1000) \cdot \exp(-321/200))/80 - (6 \cdot \exp(-$
 $321/200) \cdot \sin(1819/1000))/25, - (153 \cdot \cos(731/400) \cdot \exp(-129/80))/80 - (6 \cdot \exp(-$
 $129/80) \cdot \sin(731/400))/25, - (153 \cdot \cos(459/250) \cdot \exp(-81/50))/80 - (6 \cdot \exp(-81/50) \cdot \sin(459/250))/25, -$
 $(153 \cdot \cos(3689/2000) \cdot \exp(-651/400))/80 - (6 \cdot \exp(-651/400) \cdot \sin(3689/2000))/25, -$
 $(153 \cdot \cos(1853/1000) \cdot \exp(-327/200))/80 - (6 \cdot \exp(-327/200) \cdot \sin(1853/1000))/25, -$
 $(153 \cdot \cos(3723/2000) \cdot \exp(-657/400))/80 - (6 \cdot \exp(-657/400) \cdot \sin(3723/2000))/25, -$
 $(153 \cdot \cos(187/100) \cdot \exp(-33/20))/80 - (6 \cdot \exp(-33/20) \cdot \sin(187/100))/25, - (153 \cdot \cos(3757/2000) \cdot \exp(-$
 $663/400))/80 - (6 \cdot \exp(-663/400) \cdot \sin(3757/2000))/25, - (153 \cdot \cos(1887/1000) \cdot \exp(-333/200))/80 -$
 $(6 \cdot \exp(-333/200) \cdot \sin(1887/1000))/25, - (153 \cdot \cos(3791/2000) \cdot \exp(-669/400))/80 - (6 \cdot \exp(-$
 $669/400) \cdot \sin(3791/2000))/25, - (153 \cdot \cos(238/125) \cdot \exp(-42/25))/80 - (6 \cdot \exp(-42/25) \cdot \sin(238/125))/25,$
 $- (153 \cdot \cos(153/80) \cdot \exp(-27/16))/80 - (6 \cdot \exp(-27/16) \cdot \sin(153/80))/25, - (153 \cdot \cos(1921/1000) \cdot \exp(-$
 $339/200))/80 - (6 \cdot \exp(-339/200) \cdot \sin(1921/1000))/25, - (153 \cdot \cos(3859/2000) \cdot \exp(-681/400))/80 -$
 $(6 \cdot \exp(-681/400) \cdot \sin(3859/2000))/25, - (153 \cdot \cos(969/500) \cdot \exp(-171/100))/80 - (6 \cdot \exp(-$
 $171/100) \cdot \sin(969/500))/25, - (153 \cdot \cos(3893/2000) \cdot \exp(-687/400))/80 - (6 \cdot \exp(-$
 $687/400) \cdot \sin(3893/2000))/25, - (153 \cdot \cos(391/200) \cdot \exp(-69/40))/80 - (6 \cdot \exp(-69/40) \cdot \sin(391/200))/25,$
 $- (153 \cdot \cos(3927/2000) \cdot \exp(-693/400))/80 - (6 \cdot \exp(-693/400) \cdot \sin(3927/2000))/25, -$
 $(153 \cdot \cos(493/250) \cdot \exp(-87/50))/80 - (6 \cdot \exp(-87/50) \cdot \sin(493/250))/25, - (153 \cdot \cos(3961/2000) \cdot \exp(-$

$$\begin{aligned} & 699/400)/80 - (6*\exp(-699/400)*\sin(3961/2000))/25, - (153*\cos(1989/1000)*\exp(-351/200))/80 - \\ & (6*\exp(-351/200)*\sin(1989/1000))/25, - (153*\cos(799/400)*\exp(-141/80))/80 - (6*\exp(- \\ & 141/80)*\sin(799/400))/25, - (153*\cos(1003/500)*\exp(-177/100))/80 - \\ & (6*\exp(177/100)*\sin(1003/500))/25, - (153*\cos(4029/2000)*\exp(-711/400))/80 - \\ & (6*\exp(711/400)*\sin(4029/2000))/25, - (153*\cos(2023/1000)*\exp(-357/200))/80 - (6*\exp(- \\ & 357/200)*\sin(2023/1000))/25, - (153*\cos(4063/2000)*\exp(-717/400))/80 - (6*\exp(- \\ & 717/400)*\sin(4063/2000))/25, - (153*\cos(51/25)*\exp(-9/5))/80 - (6*\exp(-9/5)*\sin(51/25))/25, - \\ & (153*\cos(4097/2000)*\exp(-723/400))/80 - (6*\exp(-723/400)*\sin(4097/2000))/25, - \\ & (153*\cos(2057/1000)*\exp(-363/200))/80 - (6*\exp(-363/200)*\sin(2057/1000))/25, - \\ & (153*\cos(4131/2000)*\exp(-729/400))/80 - (6*\exp(-729/400)*\sin(4131/2000))/25, - \\ & (153*\cos(1037/500)*\exp(-183/100))/80 - (6*\exp(-183/100)*\sin(1037/500))/25, - \\ & (153*\cos(833/400)*\exp(-147/80))/80 - (6*\exp(-147/80)*\sin(833/400))/25, - (153*\cos(2091/1000)*\exp(- \\ & 369/200))/80 - (6*\exp(-369/200)*\sin(2091/1000))/25, - (153*\cos(4199/2000)*\exp(-741/400))/80 - \\ & (6*\exp(-741/400)*\sin(4199/2000))/25, - (153*\cos(527/250)*\exp(-93/50))/80 - (6*\exp(- \\ & 93/50)*\sin(527/250))/25, - (153*\cos(4233/2000)*\exp(-747/400))/80 - (6*\exp(- \\ & 747/400)*\sin(4233/2000))/25, - (153*\cos(17/8)*\exp(-15/8))/80 - (6*\exp(-15/8)*\sin(17/8))/25] \end{aligned}$$

QUESTION 4c

```

Program on m-file
commandwindow clear
clc close all syms x
y=5*sin(5*x)^5
yint=int(y,0,22/7)
format rat

```

Command window

y =

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

yint =

$-(\cos(110/7) - 1)^3*(9*\cos(110/7) + (3*\cos(220/7))/2 + 19/2))/15$