

MATLAB TEST

Question 4a

commandwindow

clear

clc

a=[0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]

b=[-4;2;6;4]

y=inv(a)

x=y\*b

answer log:

a =

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

```

b = -4

2

6

4

y = -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

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=(0:0.01:0.25)

dn=subs(d,tn)

v=diff(d)

vn=subs(v,tn)

figure (3)

plot(tn,vn)

xlabel('time (min)')

ylabel('velocity (km/min)')

axis tight

grid on

grid minor

a=diff(v)

an=subs(a,tn)

figure (4)

plot(tn,an)

xlabel('time (min)')

ylabel('acceleration (km/min^2)')

```

axis tight
grid on
grid minor

figure (5)
plot(tn,vn,tn,an)
xlabel('time(min)')
ylabel('variable')
legend('velocity(km/min)', 'acceleration(km/min^2)', 'location', 'best')
axis tight
grid on
grid minor

```

GRAPHS:

answer log:

d =

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

tn =

Columns 1 through 12

	0	0.0100	0.0200	0.0300	0.0400	0.0500	0.0600
0.0700	0.0800	0.0900	0.1000	0.1100			

Columns 13 through 24

	0.1200	0.1300	0.1400	0.1500	0.1600	0.1700	0.1800
0.1900	0.2000	0.2100	0.2200	0.2300			

Columns 25 through 36

	0.2400	0.2500	0.2600	0.2700	0.2800	0.2900	0.3000
0.3100	0.3200	0.3300	0.3400	0.3500			

Columns 37 through 48

	0.3600	0.3700	0.3800	0.3900	0.4000	0.4100	0.4200
0.4300	0.4400	0.4500	0.4600	0.4700			

Columns 49 through 60

	0.4800	0.4900	0.5000	0.5100	0.5200	0.5300	0.5400
0.5500	0.5600	0.5700	0.5800	0.5900			

Columns 61 through 72

0.6000	0.6100	0.6200	0.6300	0.6400	0.6500	0.6600
0.6700	0.6800	0.6900	0.7000	0.7100		

Columns 73 through 84

0.7200	0.7300	0.7400	0.7500	0.7600	0.7700	0.7800
0.7900	0.8000	0.8100	0.8200	0.8300		

Columns 85 through 96

0.8400	0.8500	0.8600	0.8700	0.8800	0.8900	0.9000
0.9100	0.9200	0.9300	0.9400	0.9500		

Columns 97 through 108

0.9600	0.9700	0.9800	0.9900	1.0000	1.0100	1.0200
1.0300	1.0400	1.0500	1.0600	1.0700		

Columns 109 through 120

1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400
1.1500	1.1600	1.1700	1.1800	1.1900		

Columns 121 through 132

1.2000	1.2100	1.2200	1.2300	1.2400	1.2500	1.2600
1.2700	1.2800	1.2900	1.3000	1.3100		

Columns 133 through 144

1.3200	1.3300	1.3400	1.3500	1.3600	1.3700	1.3800
1.3900	1.4000	1.4100	1.4200	1.4300		

Columns 145 through 156

1.4400	1.4500	1.4600	1.4700	1.4800	1.4900	1.5000
1.5100	1.5200	1.5300	1.5400	1.5500		

Columns 157 through 168

1.5600	1.5700	1.5800	1.5900	1.6000	1.6100	1.6200
1.6300	1.6400	1.6500	1.6600	1.6700		

Columns 169 through 180

1.6800	1.6900	1.7000	1.7100	1.7200	1.7300	1.7400
1.7500	1.7600	1.7700	1.7800	1.7900		

Columns 181 through 192

1.8000	1.8100	1.8200	1.8300	1.8400	1.8500	1.8600
1.8700	1.8800	1.8900	1.9000	1.9100		

Columns 193 through 204

1.9200	1.9300	1.9400	1.9500	1.9600	1.9700	1.9800
1.9900	2.0000	2.0100	2.0200	2.0300		

Columns 205 through 216

2.0400	2.0500	2.0600	2.0700	2.0800	2.0900	2.1000
2.1100	2.1200	2.1300	2.1400	2.1500		

Columns 217 through 228

2.1600	2.1700	2.1800	2.1900	2.2000	2.2100	2.2200
2.2300	2.2400	2.2500	2.2600	2.2700		

Columns 229 through 240

2.2800	2.2900	2.3000	2.3100	2.3200	2.3300	2.3400
2.3500	2.3600	2.3700	2.3800	2.3900		

Columns 241 through 251

2.4000	2.4100	2.4200	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(-
```

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

$363/400 * \sin(2057/2000))/2 + 363/800, (3 * \exp(-183/200) * \sin(1037/1000))/2$   
 $+ 183/400, (3 * \exp(-369/400) * \sin(2091/2000))/2 + 369/800, (3 * \exp(-$   
 $93/100) * \sin(527/500))/2 + 93/200, (3 * \exp(-15/16) * \sin(17/16))/2 + 15/32,$   
 $(3 * \exp(-189/200) * \sin(1071/1000))/2 + 189/400, (3 * \exp(-$   
 $381/400) * \sin(2159/2000))/2 + 381/800, (3 * \exp(-24/25) * \sin(136/125))/2 +$   
 $12/25, (3 * \exp(-387/400) * \sin(2193/2000))/2 + 387/800, (3 * \exp(-$   
 $39/40) * \sin(221/200))/2 + 39/80, (3 * \exp(-393/400) * \sin(2227/2000))/2 +$   
 $393/800, (3 * \exp(-99/100) * \sin(561/500))/2 + 99/200, (3 * \exp(-$   
 $399/400) * \sin(2261/2000))/2 + 399/800, (3 * \exp(-201/200) * \sin(1139/1000))/2$   
 $+ 201/400, (3 * \exp(-81/80) * \sin(459/400))/2 + 81/160, (3 * \exp(-$   
 $51/50) * \sin(289/250))/2 + 51/100, (3 * \exp(-411/400) * \sin(2329/2000))/2 +$   
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 $417/400) * \sin(2363/2000))/2 + 417/800, (3 * \exp(-21/20) * \sin(119/100))/2 +$   
 $21/40, (3 * \exp(-423/400) * \sin(2397/2000))/2 + 423/800, (3 * \exp(-$   
 $213/200) * \sin(1207/1000))/2 + 213/400, (3 * \exp(-429/400) * \sin(2431/2000))/2$   
 $+ 429/800, (3 * \exp(-27/25) * \sin(153/125))/2 + 27/50, (3 * \exp(-$   
 $87/80) * \sin(493/400))/2 + 87/160, (3 * \exp(-219/200) * \sin(1241/1000))/2 +$   
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 $111/100) * \sin(629/500))/2 + 111/200, (3 * \exp(-447/400) * \sin(2533/2000))/2 +$   
 $447/800, (3 * \exp(-9/8) * \sin(51/40))/2 + 9/16, (3 * \exp(-$   
 $453/400) * \sin(2567/2000))/2 + 453/800, (3 * \exp(-57/50) * \sin(323/250))/2 +$   
 $57/100, (3 * \exp(-459/400) * \sin(2601/2000))/2 + 459/800, (3 * \exp(-$   
 $231/200) * \sin(1309/1000))/2 + 231/400, (3 * \exp(-93/80) * \sin(527/400))/2 +$   
 $93/160, (3 * \exp(-117/100) * \sin(663/500))/2 + 117/200, (3 * \exp(-$   
 $471/400) * \sin(2669/2000))/2 + 471/800, (3 * \exp(-237/200) * \sin(1343/1000))/2$   
 $+ 237/400, (3 * \exp(-477/400) * \sin(2703/2000))/2 + 477/800, (3 * \exp(-$   
 $6/5) * \sin(34/25))/2 + 3/5, (3 * \exp(-483/400) * \sin(2737/2000))/2 + 483/800,$   
 $(3 * \exp(-243/200) * \sin(1377/1000))/2 + 243/400, (3 * \exp(-$   
 $489/400) * \sin(2771/2000))/2 + 489/800, (3 * \exp(-123/100) * \sin(697/500))/2 +$   
 $123/200, (3 * \exp(-99/80) * \sin(561/400))/2 + 99/160, (3 * \exp(-$   
 $249/200) * \sin(1411/1000))/2 + 249/400, (3 * \exp(-501/400) * \sin(2839/2000))/2$   
 $+ 501/800, (3 * \exp(-63/50) * \sin(357/250))/2 + 63/100, (3 * \exp(-$   
 $507/400) * \sin(2873/2000))/2 + 507/800, (3 * \exp(-51/40) * \sin(289/200))/2 +$   
 $51/80, (3 * \exp(-513/400) * \sin(2907/2000))/2 + 513/800, (3 * \exp(-$   
 $129/100) * \sin(731/500))/2 + 129/200, (3 * \exp(-519/400) * \sin(2941/2000))/2 +$   
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 $21/16) * \sin(119/80))/2 + 21/32, (3 * \exp(-33/25) * \sin(187/125))/2 + 33/50,$   
 $(3 * \exp(-531/400) * \sin(3009/2000))/2 + 531/800, (3 * \exp(-$   
 $267/200) * \sin(1513/1000))/2 + 267/400, (3 * \exp(-537/400) * \sin(3043/2000))/2$   
 $+ 537/800, (3 * \exp(-27/20) * \sin(153/100))/2 + 27/40, (3 * \exp(-$   
 $543/400) * \sin(3077/2000))/2 + 543/800, (3 * \exp(-273/200) * \sin(1547/1000))/2$   
 $+ 273/400, (3 * \exp(-549/400) * \sin(3111/2000))/2 + 549/800, (3 * \exp(-$   
 $69/50) * \sin(391/250))/2 + 69/100, (3 * \exp(-111/80) * \sin(629/400))/2 +$   
 $111/160, (3 * \exp(-279/200) * \sin(1581/1000))/2 + 279/400, (3 * \exp(-$   
 $561/400) * \sin(3179/2000))/2 + 561/800, (3 * \exp(-141/100) * \sin(799/500))/2 +$   
 $141/200, (3 * \exp(-567/400) * \sin(3213/2000))/2 + 567/800, (3 * \exp(-$   
 $57/40) * \sin(323/200))/2 + 57/80, (3 * \exp(-573/400) * \sin(3247/2000))/2 +$   
 $573/800, (3 * \exp(-36/25) * \sin(204/125))/2 + 18/25, (3 * \exp(-$   
 $579/400) * \sin(3281/2000))/2 + 579/800, (3 * \exp(-291/200) * \sin(1649/1000))/2$   
 $+ 291/400, (3 * \exp(-117/80) * \sin(663/400))/2 + 117/160, (3 * \exp(-$   
 $147/100) * \sin(833/500))/2 + 147/200, (3 * \exp(-591/400) * \sin(3349/2000))/2 +$   
 $591/800, (3 * \exp(-297/200) * \sin(1683/1000))/2 + 297/400, (3 * \exp(-$   
 $597/400) * \sin(3383/2000))/2 + 597/800, (3 * \exp(-3/2) * \sin(17/10))/2 + 3/4,$   
 $(3 * \exp(-603/400) * \sin(3417/2000))/2 + 603/800, (3 * \exp(-$

$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 =

$[ 33/20, (51 * \cos(17/2000) * \exp(-3/400)) / 40 - (9 * \exp(-3/400) * \sin(17/2000)) / 8 + 3/8, (51 * \cos(17/1000) * \exp(-3/200)) / 40 - (9 * \exp(-3/200) * \sin(17/1000)) / 8 + 3/8, (51 * \cos(51/2000) * \exp(-9/400)) / 40 - (9 * \exp(-9/400) * \sin(51/2000)) / 8 + 3/8, (51 * \cos(17/500) * \exp(-3/100)) / 40 - (9 * \exp(-3/100) * \sin(17/500)) / 8 + 3/8, (51 * \cos(17/400) * \exp(-3/80)) / 40 - (9 * \exp(-3/80) * \sin(17/400)) / 8 + 3/8, (51 * \cos(51/1000) * \exp(-9/200)) / 40 - (9 * \exp(-9/200) * \sin(51/1000)) / 8 + 3/8, (51 * \cos(119/2000) * \exp(-21/400)) / 40 - (9 * \exp(-21/400) * \sin(119/2000)) / 8 + 3/8, (51 * \cos(17/250) * \exp(-3/50)) / 40 - (9 * \exp(-3/50) * \sin(17/250)) / 8 + 3/8, (51 * \cos(153/2000) * \exp(-27/400)) / 40 - (9 * \exp(-27/400) * \sin(153/2000)) / 8 + 3/8, (51 * \cos(17/200) * \exp(-3/40)) / 40 - (9 * \exp(-3/40) * \sin(17/200)) / 8 + 3/8, (51 * \cos(187/2000) * \exp(-33/400)) / 40 -$

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



$(51 \cdot \cos(1003/2000) \cdot \exp(-177/400))/40 - (9 \cdot \exp(-177/400) \cdot \sin(1003/2000))/8 + 3/8,$   
 $(51 \cdot \cos(51/100) \cdot \exp(-9/20))/40 - (9 \cdot \exp(-9/20) \cdot \sin(51/100))/8 + 3/8,$   
 $(51 \cdot \cos(1037/2000) \cdot \exp(-183/400))/40 - (9 \cdot \exp(-183/400) \cdot \sin(1037/2000))/8 + 3/8,$   
 $(51 \cdot \cos(527/1000) \cdot \exp(-93/200))/40 - (9 \cdot \exp(-93/200) \cdot \sin(527/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1071/2000) \cdot \exp(-189/400))/40 - (9 \cdot \exp(-189/400) \cdot \sin(1071/2000))/8 + 3/8,$   
 $(51 \cdot \cos(68/125) \cdot \exp(-12/25))/40 - (9 \cdot \exp(-12/25) \cdot \sin(68/125))/8 + 3/8,$   
 $(51 \cdot \cos(221/400) \cdot \exp(-39/80))/40 - (9 \cdot \exp(-39/80) \cdot \sin(221/400))/8 + 3/8,$   
 $(51 \cdot \cos(561/1000) \cdot \exp(-99/200))/40 - (9 \cdot \exp(-99/200) \cdot \sin(561/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1139/2000) \cdot \exp(-201/400))/40 - (9 \cdot \exp(-201/400) \cdot \sin(1139/2000))/8 + 3/8,$   
 $(51 \cdot \cos(289/500) \cdot \exp(-51/100))/40 - (9 \cdot \exp(-51/100) \cdot \sin(289/500))/8 + 3/8,$   
 $(51 \cdot \cos(1173/2000) \cdot \exp(-207/400))/40 - (9 \cdot \exp(-207/400) \cdot \sin(1173/2000))/8 + 3/8,$   
 $(51 \cdot \cos(119/200) \cdot \exp(-21/40))/40 - (9 \cdot \exp(-21/40) \cdot \sin(119/200))/8 + 3/8,$   
 $(51 \cdot \cos(1207/2000) \cdot \exp(-213/400))/40 - (9 \cdot \exp(-213/400) \cdot \sin(1207/2000))/8 + 3/8,$   
 $(51 \cdot \cos(153/250) \cdot \exp(-27/50))/40 - (9 \cdot \exp(-27/50) \cdot \sin(153/250))/8 + 3/8,$   
 $(51 \cdot \cos(1241/2000) \cdot \exp(-219/400))/40 - (9 \cdot \exp(-219/400) \cdot \sin(1241/2000))/8 + 3/8,$   
 $(51 \cdot \cos(629/1000) \cdot \exp(-111/200))/40 - (9 \cdot \exp(-111/200) \cdot \sin(629/1000))/8 + 3/8,$   
 $(51 \cdot \cos(51/80) \cdot \exp(-9/16))/40 - (9 \cdot \exp(-9/16) \cdot \sin(51/80))/8 + 3/8,$   
 $(51 \cdot \cos(323/500) \cdot \exp(-57/100))/40 - (9 \cdot \exp(-57/100) \cdot \sin(323/500))/8 + 3/8,$   
 $(51 \cdot \cos(1309/2000) \cdot \exp(-231/400))/40 - (9 \cdot \exp(-231/400) \cdot \sin(1309/2000))/8 + 3/8,$   
 $(51 \cdot \cos(663/1000) \cdot \exp(-117/200))/40 - (9 \cdot \exp(-117/200) \cdot \sin(663/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1343/2000) \cdot \exp(-237/400))/40 - (9 \cdot \exp(-237/400) \cdot \sin(1343/2000))/8 + 3/8,$   
 $(51 \cdot \cos(17/25) \cdot \exp(-3/5))/40 - (9 \cdot \exp(-3/5) \cdot \sin(17/25))/8 + 3/8,$   
 $(51 \cdot \cos(1377/2000) \cdot \exp(-243/400))/40 - (9 \cdot \exp(-243/400) \cdot \sin(1377/2000))/8 + 3/8,$   
 $(51 \cdot \cos(697/1000) \cdot \exp(-123/200))/40 - (9 \cdot \exp(-123/200) \cdot \sin(697/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1411/2000) \cdot \exp(-249/400))/40 - (9 \cdot \exp(-249/400) \cdot \sin(1411/2000))/8 + 3/8,$   
 $(51 \cdot \cos(357/500) \cdot \exp(-63/100))/40 - (9 \cdot \exp(-63/100) \cdot \sin(357/500))/8 + 3/8,$   
 $(51 \cdot \cos(289/400) \cdot \exp(-51/80))/40 - (9 \cdot \exp(-51/80) \cdot \sin(289/400))/8 + 3/8,$   
 $(51 \cdot \cos(731/1000) \cdot \exp(-129/200))/40 - (9 \cdot \exp(-129/200) \cdot \sin(731/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1479/2000) \cdot \exp(-261/400))/40 - (9 \cdot \exp(-261/400) \cdot \sin(1479/2000))/8 + 3/8,$   
 $(51 \cdot \cos(187/250) \cdot \exp(-33/50))/40 - (9 \cdot \exp(-33/50) \cdot \sin(187/250))/8 + 3/8,$   
 $(51 \cdot \cos(1513/2000) \cdot \exp(-267/400))/40 - (9 \cdot \exp(-267/400) \cdot \sin(1513/2000))/8 + 3/8,$   
 $(51 \cdot \cos(153/200) \cdot \exp(-27/40))/40 - (9 \cdot \exp(-27/40) \cdot \sin(153/200))/8 + 3/8,$   
 $(51 \cdot \cos(1547/2000) \cdot \exp(-273/400))/40 - (9 \cdot \exp(-273/400) \cdot \sin(1547/2000))/8 + 3/8,$   
 $(51 \cdot \cos(391/500) \cdot \exp(-69/100))/40 - (9 \cdot \exp(-69/100) \cdot \sin(391/500))/8 + 3/8,$   
 $(51 \cdot \cos(1581/2000) \cdot \exp(-279/400))/40 - (9 \cdot \exp(-279/400) \cdot \sin(1581/2000))/8 + 3/8,$   
 $(51 \cdot \cos(799/1000) \cdot \exp(-141/200))/40 - (9 \cdot \exp(-141/200) \cdot \sin(799/1000))/8 + 3/8,$   
 $(51 \cdot \cos(323/400) \cdot \exp(-57/80))/40 - (9 \cdot \exp(-57/80) \cdot \sin(323/400))/8 + 3/8,$   
 $(51 \cdot \cos(102/125) \cdot \exp(-18/25))/40 - (9 \cdot \exp(-18/25) \cdot \sin(102/125))/8 + 3/8,$   
 $(51 \cdot \cos(1649/2000) \cdot \exp(-291/400))/40 - (9 \cdot \exp(-291/400) \cdot \sin(1649/2000))/8 + 3/8,$   
 $(51 \cdot \cos(833/1000) \cdot \exp(-147/200))/40 - (9 \cdot \exp(-147/200) \cdot \sin(833/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1683/2000) \cdot \exp(-297/400))/40 - (9 \cdot \exp(-297/400) \cdot \sin(1683/2000))/8 + 3/8,$   
 $(51 \cdot \cos(17/20) \cdot \exp(-3/4))/40 - (9 \cdot \exp(-3/4) \cdot \sin(17/20))/8 + 3/8,$   
 $(51 \cdot \cos(1717/2000) \cdot \exp(-303/400))/40 - (9 \cdot \exp(-303/400) \cdot \sin(1717/2000))/8 + 3/8,$   
 $(51 \cdot \cos(867/1000) \cdot \exp(-153/200))/40 - (9 \cdot \exp(-153/200) \cdot \sin(867/1000))/8 + 3/8,$   
 $(51 \cdot \cos(1751/2000) \cdot \exp(-309/400))/40 - (9 \cdot \exp(-309/400) \cdot \sin(1751/2000))/8 + 3/8,$   
 $(51 \cdot \cos(221/250) \cdot \exp(-39/50))/40 - (9 \cdot \exp(-39/50) \cdot \sin(221/250))/8 + 3/8,$   
 $(51 \cdot \cos(357/400) \cdot \exp(-$

$63/80)/40 - (9*\exp(-63/80)*\sin(357/400))/8 + 3/8,$   
 $(51*\cos(901/1000)*\exp(-159/200))/40 - (9*\exp(-159/200)*\sin(901/1000))/8 +$   
 $3/8, (51*\cos(1819/2000)*\exp(-321/400))/40 - (9*\exp(-$   
 $321/400)*\sin(1819/2000))/8 + 3/8, (51*\cos(459/500)*\exp(-81/100))/40 -$   
 $(9*\exp(-81/100)*\sin(459/500))/8 + 3/8, (51*\cos(1853/2000)*\exp(-$   
 $327/400))/40 - (9*\exp(-327/400)*\sin(1853/2000))/8 + 3/8,$   
 $(51*\cos(187/200)*\exp(-33/40))/40 - (9*\exp(-33/40)*\sin(187/200))/8 + 3/8,$   
 $(51*\cos(1887/2000)*\exp(-333/400))/40 - (9*\exp(-333/400)*\sin(1887/2000))/8$   
 $+ 3/8, (51*\cos(119/125)*\exp(-21/25))/40 - (9*\exp(-21/25)*\sin(119/125))/8$   
 $+ 3/8, (51*\cos(1921/2000)*\exp(-339/400))/40 - (9*\exp(-$   
 $339/400)*\sin(1921/2000))/8 + 3/8, (51*\cos(969/1000)*\exp(-171/200))/40 -$   
 $(9*\exp(-171/200)*\sin(969/1000))/8 + 3/8, (51*\cos(391/400)*\exp(-69/80))/40$   
 $- (9*\exp(-69/80)*\sin(391/400))/8 + 3/8, (51*\cos(493/500)*\exp(-87/100))/40$   
 $- (9*\exp(-87/100)*\sin(493/500))/8 + 3/8, (51*\cos(1989/2000)*\exp(-$   
 $351/400))/40 - (9*\exp(-351/400)*\sin(1989/2000))/8 + 3/8,$   
 $(51*\cos(1003/1000)*\exp(-177/200))/40 - (9*\exp(-177/200)*\sin(1003/1000))/8$   
 $+ 3/8, (51*\cos(2023/2000)*\exp(-357/400))/40 - (9*\exp(-$   
 $357/400)*\sin(2023/2000))/8 + 3/8, (51*\cos(51/50)*\exp(-9/10))/40 -$   
 $(9*\exp(-9/10)*\sin(51/50))/8 + 3/8, (51*\cos(2057/2000)*\exp(-363/400))/40 -$   
 $(9*\exp(-363/400)*\sin(2057/2000))/8 + 3/8, (51*\cos(1037/1000)*\exp(-$   
 $183/200))/40 - (9*\exp(-183/200)*\sin(1037/1000))/8 + 3/8,$   
 $(51*\cos(2091/2000)*\exp(-369/400))/40 - (9*\exp(-369/400)*\sin(2091/2000))/8$   
 $+ 3/8, (51*\cos(527/500)*\exp(-93/100))/40 - (9*\exp(-$   
 $93/100)*\sin(527/500))/8 + 3/8, (51*\cos(17/16)*\exp(-15/16))/40 - (9*\exp(-$   
 $15/16)*\sin(17/16))/8 + 3/8, (51*\cos(1071/1000)*\exp(-189/200))/40 -$   
 $(9*\exp(-189/200)*\sin(1071/1000))/8 + 3/8, (51*\cos(2159/2000)*\exp(-$   
 $381/400))/40 - (9*\exp(-381/400)*\sin(2159/2000))/8 + 3/8,$   
 $(51*\cos(136/125)*\exp(-24/25))/40 - (9*\exp(-24/25)*\sin(136/125))/8 + 3/8,$   
 $(51*\cos(2193/2000)*\exp(-387/400))/40 - (9*\exp(-387/400)*\sin(2193/2000))/8$   
 $+ 3/8, (51*\cos(221/200)*\exp(-39/40))/40 - (9*\exp(-39/40)*\sin(221/200))/8$   
 $+ 3/8, (51*\cos(2227/2000)*\exp(-393/400))/40 - (9*\exp(-$   
 $393/400)*\sin(2227/2000))/8 + 3/8, (51*\cos(561/500)*\exp(-99/100))/40 -$   
 $(9*\exp(-99/100)*\sin(561/500))/8 + 3/8, (51*\cos(2261/2000)*\exp(-$   
 $399/400))/40 - (9*\exp(-399/400)*\sin(2261/2000))/8 + 3/8,$   
 $(51*\cos(1139/1000)*\exp(-201/200))/40 - (9*\exp(-201/200)*\sin(1139/1000))/8$   
 $+ 3/8, (51*\cos(459/400)*\exp(-81/80))/40 - (9*\exp(-81/80)*\sin(459/400))/8$   
 $+ 3/8, (51*\cos(289/250)*\exp(-51/50))/40 - (9*\exp(-51/50)*\sin(289/250))/8$   
 $+ 3/8, (51*\cos(2329/2000)*\exp(-411/400))/40 - (9*\exp(-$   
 $411/400)*\sin(2329/2000))/8 + 3/8, (51*\cos(1173/1000)*\exp(-207/200))/40 -$   
 $(9*\exp(-207/200)*\sin(1173/1000))/8 + 3/8, (51*\cos(2363/2000)*\exp(-$   
 $417/400))/40 - (9*\exp(-417/400)*\sin(2363/2000))/8 + 3/8,$   
 $(51*\cos(119/100)*\exp(-21/20))/40 - (9*\exp(-21/20)*\sin(119/100))/8 + 3/8,$   
 $(51*\cos(2397/2000)*\exp(-423/400))/40 - (9*\exp(-423/400)*\sin(2397/2000))/8$   
 $+ 3/8, (51*\cos(1207/1000)*\exp(-213/200))/40 - (9*\exp(-$   
 $213/200)*\sin(1207/1000))/8 + 3/8, (51*\cos(2431/2000)*\exp(-429/400))/40 -$   
 $(9*\exp(-429/400)*\sin(2431/2000))/8 + 3/8, (51*\cos(153/125)*\exp(-$   
 $27/25))/40 - (9*\exp(-27/25)*\sin(153/125))/8 + 3/8, (51*\cos(493/400)*\exp(-$   
 $87/80))/40 - (9*\exp(-87/80)*\sin(493/400))/8 + 3/8,$   
 $(51*\cos(1241/1000)*\exp(-219/200))/40 - (9*\exp(-219/200)*\sin(1241/1000))/8$   
 $+ 3/8, (51*\cos(2499/2000)*\exp(-441/400))/40 - (9*\exp(-$   
 $441/400)*\sin(2499/2000))/8 + 3/8, (51*\cos(629/500)*\exp(-111/100))/40 -$   
 $(9*\exp(-111/100)*\sin(629/500))/8 + 3/8, (51*\cos(2533/2000)*\exp(-$   
 $447/400))/40 - (9*\exp(-447/400)*\sin(2533/2000))/8 + 3/8,$   
 $(51*\cos(51/40)*\exp(-9/8))/40 - (9*\exp(-9/8)*\sin(51/40))/8 + 3/8,$

$(51 \cdot \cos(2567/2000) \cdot \exp(-453/400))/40 - (9 \cdot \exp(-453/400) \cdot \sin(2567/2000))/8$   
 $+ 3/8, (51 \cdot \cos(323/250) \cdot \exp(-57/50))/40 - (9 \cdot \exp(-57/50) \cdot \sin(323/250))/8$   
 $+ 3/8, (51 \cdot \cos(2601/2000) \cdot \exp(-459/400))/40 - (9 \cdot \exp(-$   
 $459/400) \cdot \sin(2601/2000))/8 + 3/8, (51 \cdot \cos(1309/1000) \cdot \exp(-231/200))/40 -$   
 $(9 \cdot \exp(-231/200) \cdot \sin(1309/1000))/8 + 3/8, (51 \cdot \cos(527/400) \cdot \exp(-$   
 $93/80))/40 - (9 \cdot \exp(-93/80) \cdot \sin(527/400))/8 + 3/8, (51 \cdot \cos(663/500) \cdot \exp(-$   
 $117/100))/40 - (9 \cdot \exp(-117/100) \cdot \sin(663/500))/8 + 3/8,$   
 $(51 \cdot \cos(2669/2000) \cdot \exp(-471/400))/40 - (9 \cdot \exp(-471/400) \cdot \sin(2669/2000))/8$   
 $+ 3/8, (51 \cdot \cos(1343/1000) \cdot \exp(-237/200))/40 - (9 \cdot \exp(-$   
 $237/200) \cdot \sin(1343/1000))/8 + 3/8, (51 \cdot \cos(2703/2000) \cdot \exp(-477/400))/40 -$   
 $(9 \cdot \exp(-477/400) \cdot \sin(2703/2000))/8 + 3/8, (51 \cdot \cos(34/25) \cdot \exp(-6/5))/40 -$   
 $(9 \cdot \exp(-6/5) \cdot \sin(34/25))/8 + 3/8, (51 \cdot \cos(2737/2000) \cdot \exp(-483/400))/40 -$   
 $(9 \cdot \exp(-483/400) \cdot \sin(2737/2000))/8 + 3/8, (51 \cdot \cos(1377/1000) \cdot \exp(-$   
 $243/200))/40 - (9 \cdot \exp(-243/200) \cdot \sin(1377/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2771/2000) \cdot \exp(-489/400))/40 - (9 \cdot \exp(-489/400) \cdot \sin(2771/2000))/8$   
 $+ 3/8, (51 \cdot \cos(697/500) \cdot \exp(-123/100))/40 - (9 \cdot \exp(-$   
 $123/100) \cdot \sin(697/500))/8 + 3/8, (51 \cdot \cos(561/400) \cdot \exp(-99/80))/40 -$   
 $(9 \cdot \exp(-99/80) \cdot \sin(561/400))/8 + 3/8, (51 \cdot \cos(1411/1000) \cdot \exp(-$   
 $249/200))/40 - (9 \cdot \exp(-249/200) \cdot \sin(1411/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2839/2000) \cdot \exp(-501/400))/40 - (9 \cdot \exp(-501/400) \cdot \sin(2839/2000))/8$   
 $+ 3/8, (51 \cdot \cos(357/250) \cdot \exp(-63/50))/40 - (9 \cdot \exp(-63/50) \cdot \sin(357/250))/8$   
 $+ 3/8, (51 \cdot \cos(2873/2000) \cdot \exp(-507/400))/40 - (9 \cdot \exp(-$   
 $507/400) \cdot \sin(2873/2000))/8 + 3/8, (51 \cdot \cos(289/200) \cdot \exp(-51/40))/40 -$   
 $(9 \cdot \exp(-51/40) \cdot \sin(289/200))/8 + 3/8, (51 \cdot \cos(2907/2000) \cdot \exp(-$   
 $513/400))/40 - (9 \cdot \exp(-513/400) \cdot \sin(2907/2000))/8 + 3/8,$   
 $(51 \cdot \cos(731/500) \cdot \exp(-129/100))/40 - (9 \cdot \exp(-129/100) \cdot \sin(731/500))/8 +$   
 $3/8, (51 \cdot \cos(2941/2000) \cdot \exp(-519/400))/40 - (9 \cdot \exp(-$   
 $519/400) \cdot \sin(2941/2000))/8 + 3/8, (51 \cdot \cos(1479/1000) \cdot \exp(-261/200))/40 -$   
 $(9 \cdot \exp(-261/200) \cdot \sin(1479/1000))/8 + 3/8, (51 \cdot \cos(119/80) \cdot \exp(-21/16))/40 -$   
 $(9 \cdot \exp(-21/16) \cdot \sin(119/80))/8 + 3/8, (51 \cdot \cos(187/125) \cdot \exp(-33/25))/40 -$   
 $(9 \cdot \exp(-33/25) \cdot \sin(187/125))/8 + 3/8, (51 \cdot \cos(3009/2000) \cdot \exp(-$   
 $531/400))/40 - (9 \cdot \exp(-531/400) \cdot \sin(3009/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1513/1000) \cdot \exp(-267/200))/40 - (9 \cdot \exp(-267/200) \cdot \sin(1513/1000))/8$   
 $+ 3/8, (51 \cdot \cos(3043/2000) \cdot \exp(-537/400))/40 - (9 \cdot \exp(-$   
 $537/400) \cdot \sin(3043/2000))/8 + 3/8, (51 \cdot \cos(153/100) \cdot \exp(-27/20))/40 -$   
 $(9 \cdot \exp(-27/20) \cdot \sin(153/100))/8 + 3/8, (51 \cdot \cos(3077/2000) \cdot \exp(-$   
 $543/400))/40 - (9 \cdot \exp(-543/400) \cdot \sin(3077/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1547/1000) \cdot \exp(-273/200))/40 - (9 \cdot \exp(-273/200) \cdot \sin(1547/1000))/8$   
 $+ 3/8, (51 \cdot \cos(3111/2000) \cdot \exp(-549/400))/40 - (9 \cdot \exp(-$   
 $549/400) \cdot \sin(3111/2000))/8 + 3/8, (51 \cdot \cos(391/250) \cdot \exp(-69/50))/40 -$   
 $(9 \cdot \exp(-69/50) \cdot \sin(391/250))/8 + 3/8, (51 \cdot \cos(629/400) \cdot \exp(-111/80))/40 -$   
 $(9 \cdot \exp(-111/80) \cdot \sin(629/400))/8 + 3/8, (51 \cdot \cos(1581/1000) \cdot \exp(-$   
 $279/200))/40 - (9 \cdot \exp(-279/200) \cdot \sin(1581/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3179/2000) \cdot \exp(-561/400))/40 - (9 \cdot \exp(-561/400) \cdot \sin(3179/2000))/8$   
 $+ 3/8, (51 \cdot \cos(799/500) \cdot \exp(-141/100))/40 - (9 \cdot \exp(-$   
 $141/100) \cdot \sin(799/500))/8 + 3/8, (51 \cdot \cos(3213/2000) \cdot \exp(-567/400))/40 -$   
 $(9 \cdot \exp(-567/400) \cdot \sin(3213/2000))/8 + 3/8, (51 \cdot \cos(323/200) \cdot \exp(-$   
 $57/40))/40 - (9 \cdot \exp(-57/40) \cdot \sin(323/200))/8 + 3/8,$   
 $(51 \cdot \cos(3247/2000) \cdot \exp(-573/400))/40 - (9 \cdot \exp(-573/400) \cdot \sin(3247/2000))/8$   
 $+ 3/8, (51 \cdot \cos(204/125) \cdot \exp(-36/25))/40 - (9 \cdot \exp(-36/25) \cdot \sin(204/125))/8$   
 $+ 3/8, (51 \cdot \cos(3281/2000) \cdot \exp(-579/400))/40 - (9 \cdot \exp(-$   
 $579/400) \cdot \sin(3281/2000))/8 + 3/8, (51 \cdot \cos(1649/1000) \cdot \exp(-291/200))/40 -$   
 $(9 \cdot \exp(-291/200) \cdot \sin(1649/1000))/8 + 3/8, (51 \cdot \cos(663/400) \cdot \exp(-$   
 $117/80))/40 - (9 \cdot \exp(-117/80) \cdot \sin(663/400))/8 + 3/8,$

$(51 \cdot \cos(833/500) \cdot \exp(-147/100))/40 - (9 \cdot \exp(-147/100) \cdot \sin(833/500))/8 + 3/8,$   
 $(51 \cdot \cos(3349/2000) \cdot \exp(-591/400))/40 - (9 \cdot \exp(-591/400) \cdot \sin(3349/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1683/1000) \cdot \exp(-297/200))/40 - (9 \cdot \exp(-297/200) \cdot \sin(1683/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3383/2000) \cdot \exp(-597/400))/40 - (9 \cdot \exp(-597/400) \cdot \sin(3383/2000))/8 + 3/8,$   
 $(51 \cdot \cos(17/10) \cdot \exp(-3/2))/40 - (9 \cdot \exp(-3/2) \cdot \sin(17/10))/8 + 3/8,$   
 $(51 \cdot \cos(3417/2000) \cdot \exp(-603/400))/40 - (9 \cdot \exp(-603/400) \cdot \sin(3417/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1717/1000) \cdot \exp(-303/200))/40 - (9 \cdot \exp(-303/200) \cdot \sin(1717/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3451/2000) \cdot \exp(-609/400))/40 - (9 \cdot \exp(-609/400) \cdot \sin(3451/2000))/8 + 3/8,$   
 $(51 \cdot \cos(867/500) \cdot \exp(-153/100))/40 - (9 \cdot \exp(-153/100) \cdot \sin(867/500))/8 + 3/8,$   
 $(51 \cdot \cos(697/400) \cdot \exp(-123/80))/40 - (9 \cdot \exp(-123/80) \cdot \sin(697/400))/8 + 3/8,$   
 $(51 \cdot \cos(1751/1000) \cdot \exp(-309/200))/40 - (9 \cdot \exp(-309/200) \cdot \sin(1751/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3519/2000) \cdot \exp(-621/400))/40 - (9 \cdot \exp(-621/400) \cdot \sin(3519/2000))/8 + 3/8,$   
 $(51 \cdot \cos(221/125) \cdot \exp(-39/25))/40 - (9 \cdot \exp(-39/25) \cdot \sin(221/125))/8 + 3/8,$   
 $(51 \cdot \cos(3553/2000) \cdot \exp(-627/400))/40 - (9 \cdot \exp(-627/400) \cdot \sin(3553/2000))/8 + 3/8,$   
 $(51 \cdot \cos(357/200) \cdot \exp(-63/40))/40 - (9 \cdot \exp(-63/40) \cdot \sin(357/200))/8 + 3/8,$   
 $(51 \cdot \cos(3587/2000) \cdot \exp(-633/400))/40 - (9 \cdot \exp(-633/400) \cdot \sin(3587/2000))/8 + 3/8,$   
 $(51 \cdot \cos(901/500) \cdot \exp(-159/100))/40 - (9 \cdot \exp(-159/100) \cdot \sin(901/500))/8 + 3/8,$   
 $(51 \cdot \cos(3621/2000) \cdot \exp(-639/400))/40 - (9 \cdot \exp(-639/400) \cdot \sin(3621/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1819/1000) \cdot \exp(-321/200))/40 - (9 \cdot \exp(-321/200) \cdot \sin(1819/1000))/8 + 3/8,$   
 $(51 \cdot \cos(731/400) \cdot \exp(-129/80))/40 - (9 \cdot \exp(-129/80) \cdot \sin(731/400))/8 + 3/8,$   
 $(51 \cdot \cos(459/250) \cdot \exp(-81/50))/40 - (9 \cdot \exp(-81/50) \cdot \sin(459/250))/8 + 3/8,$   
 $(51 \cdot \cos(3689/2000) \cdot \exp(-651/400))/40 - (9 \cdot \exp(-651/400) \cdot \sin(3689/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1853/1000) \cdot \exp(-327/200))/40 - (9 \cdot \exp(-327/200) \cdot \sin(1853/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3723/2000) \cdot \exp(-657/400))/40 - (9 \cdot \exp(-657/400) \cdot \sin(3723/2000))/8 + 3/8,$   
 $(51 \cdot \cos(187/100) \cdot \exp(-33/20))/40 - (9 \cdot \exp(-33/20) \cdot \sin(187/100))/8 + 3/8,$   
 $(51 \cdot \cos(3757/2000) \cdot \exp(-663/400))/40 - (9 \cdot \exp(-663/400) \cdot \sin(3757/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1887/1000) \cdot \exp(-333/200))/40 - (9 \cdot \exp(-333/200) \cdot \sin(1887/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3791/2000) \cdot \exp(-669/400))/40 - (9 \cdot \exp(-669/400) \cdot \sin(3791/2000))/8 + 3/8,$   
 $(51 \cdot \cos(238/125) \cdot \exp(-42/25))/40 - (9 \cdot \exp(-42/25) \cdot \sin(238/125))/8 + 3/8,$   
 $(51 \cdot \cos(153/80) \cdot \exp(-27/16))/40 - (9 \cdot \exp(-27/16) \cdot \sin(153/80))/8 + 3/8,$   
 $(51 \cdot \cos(1921/1000) \cdot \exp(-339/200))/40 - (9 \cdot \exp(-339/200) \cdot \sin(1921/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3859/2000) \cdot \exp(-681/400))/40 - (9 \cdot \exp(-681/400) \cdot \sin(3859/2000))/8 + 3/8,$   
 $(51 \cdot \cos(969/500) \cdot \exp(-171/100))/40 - (9 \cdot \exp(-171/100) \cdot \sin(969/500))/8 + 3/8,$   
 $(51 \cdot \cos(3893/2000) \cdot \exp(-687/400))/40 - (9 \cdot \exp(-687/400) \cdot \sin(3893/2000))/8 + 3/8,$   
 $(51 \cdot \cos(391/200) \cdot \exp(-69/40))/40 - (9 \cdot \exp(-69/40) \cdot \sin(391/200))/8 + 3/8,$   
 $(51 \cdot \cos(3927/2000) \cdot \exp(-693/400))/40 - (9 \cdot \exp(-693/400) \cdot \sin(3927/2000))/8 + 3/8,$   
 $(51 \cdot \cos(493/250) \cdot \exp(-87/50))/40 - (9 \cdot \exp(-87/50) \cdot \sin(493/250))/8 + 3/8,$   
 $(51 \cdot \cos(3961/2000) \cdot \exp(-699/400))/40 - (9 \cdot \exp(-699/400) \cdot \sin(3961/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1989/1000) \cdot \exp(-351/200))/40 - (9 \cdot \exp(-351/200) \cdot \sin(1989/1000))/8 + 3/8,$   
 $(51 \cdot \cos(799/400) \cdot \exp(-141/80))/40 - (9 \cdot \exp(-141/80) \cdot \sin(799/400))/8 + 3/8,$   
 $(51 \cdot \cos(1003/500) \cdot \exp(-177/100))/40 - (9 \cdot \exp(-177/100) \cdot \sin(1003/500))/8 + 3/8,$   
 $(51 \cdot \cos(4029/2000) \cdot \exp(-711/400))/40 - (9 \cdot \exp(-711/400) \cdot \sin(4029/2000))/8 + 3/8,$   
 $(51 \cdot \cos(2023/1000) \cdot \exp(-357/200))/40 - (9 \cdot \exp(-357/200) \cdot \sin(2023/1000))/8 + 3/8,$   
 $(51 \cdot \cos(4063/2000) \cdot \exp(-717/400))/40 - (9 \cdot \exp(-717/400) \cdot \sin(4063/2000))/8 + 3/8,$   
 $(51 \cdot \cos(51/25) \cdot \exp(-9/5))/40 -$

$(9 \cdot \exp(-9/5) \cdot \sin(51/25))/8 + 3/8, (51 \cdot \cos(4097/2000) \cdot \exp(-723/400))/40 -$   
 $(9 \cdot \exp(-723/400) \cdot \sin(4097/2000))/8 + 3/8, (51 \cdot \cos(2057/1000) \cdot \exp(-$   
 $363/200))/40 - (9 \cdot \exp(-363/200) \cdot \sin(2057/1000))/8 + 3/8,$   
 $(51 \cdot \cos(4131/2000) \cdot \exp(-729/400))/40 - (9 \cdot \exp(-729/400) \cdot \sin(4131/2000))/8$   
 $+ 3/8, (51 \cdot \cos(1037/500) \cdot \exp(-183/100))/40 - (9 \cdot \exp(-$   
 $183/100) \cdot \sin(1037/500))/8 + 3/8, (51 \cdot \cos(833/400) \cdot \exp(-147/80))/40 -$   
 $(9 \cdot \exp(-147/80) \cdot \sin(833/400))/8 + 3/8, (51 \cdot \cos(2091/1000) \cdot \exp(-$   
 $369/200))/40 - (9 \cdot \exp(-369/200) \cdot \sin(2091/1000))/8 + 3/8,$   
 $(51 \cdot \cos(4199/2000) \cdot \exp(-741/400))/40 - (9 \cdot \exp(-741/400) \cdot \sin(4199/2000))/8$   
 $+ 3/8, (51 \cdot \cos(527/250) \cdot \exp(-93/50))/40 - (9 \cdot \exp(-93/50) \cdot \sin(527/250))/8$   
 $+ 3/8, (51 \cdot \cos(4233/2000) \cdot \exp(-747/400))/40 - (9 \cdot \exp(-$   
 $747/400) \cdot \sin(4233/2000))/8 + 3/8, (51 \cdot \cos(17/8) \cdot \exp(-15/8))/40 - (9 \cdot \exp(-$   
 $15/8) \cdot \sin(17/8))/8 + 3/8]$

a =

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

an =

$[-153/80, -(153 \cdot \cos(17/2000) \cdot \exp(-3/400))/80 - (6 \cdot \exp(-$   
 $3/400) \cdot \sin(17/2000))/25, -(153 \cdot \cos(17/1000) \cdot \exp(-3/200))/80 - (6 \cdot \exp(-$   
 $3/200) \cdot \sin(17/1000))/25, -(153 \cdot \cos(51/2000) \cdot \exp(-9/400))/80 - (6 \cdot \exp(-$   
 $9/400) \cdot \sin(51/2000))/25, -(153 \cdot \cos(17/500) \cdot \exp(-3/100))/80 - (6 \cdot \exp(-$   
 $3/100) \cdot \sin(17/500))/25, -(153 \cdot \cos(17/400) \cdot \exp(-3/80))/80 - (6 \cdot \exp(-$   
 $3/80) \cdot \sin(17/400))/25, -(153 \cdot \cos(51/1000) \cdot \exp(-9/200))/80 - (6 \cdot \exp(-$   
 $9/200) \cdot \sin(51/1000))/25, -(153 \cdot \cos(119/2000) \cdot \exp(-21/400))/80 - (6 \cdot \exp(-$   
 $21/400) \cdot \sin(119/2000))/25, -(153 \cdot \cos(17/250) \cdot \exp(-3/50))/80 - (6 \cdot \exp(-$   
 $3/50) \cdot \sin(17/250))/25, -(153 \cdot \cos(153/2000) \cdot \exp(-27/400))/80 - (6 \cdot \exp(-$   
 $27/400) \cdot \sin(153/2000))/25, -(153 \cdot \cos(17/200) \cdot \exp(-3/40))/80 - (6 \cdot \exp(-$   
 $3/40) \cdot \sin(17/200))/25, -(153 \cdot \cos(187/2000) \cdot \exp(-33/400))/80 - (6 \cdot \exp(-$   
 $33/400) \cdot \sin(187/2000))/25, -(153 \cdot \cos(51/500) \cdot \exp(-9/100))/80 - (6 \cdot \exp(-$   
 $9/100) \cdot \sin(51/500))/25, -(153 \cdot \cos(221/2000) \cdot \exp(-39/400))/80 - (6 \cdot \exp(-$   
 $39/400) \cdot \sin(221/2000))/25, -(153 \cdot \cos(119/1000) \cdot \exp(-21/200))/80 -$   
 $(6 \cdot \exp(-21/200) \cdot \sin(119/1000))/25, -(153 \cdot \cos(51/400) \cdot \exp(-9/80))/80 -$   
 $(6 \cdot \exp(-9/80) \cdot \sin(51/400))/25, -(153 \cdot \cos(17/125) \cdot \exp(-3/25))/80 -$   
 $(6 \cdot \exp(-3/25) \cdot \sin(17/125))/25, -(153 \cdot \cos(289/2000) \cdot \exp(-51/400))/80 -$   
 $(6 \cdot \exp(-51/400) \cdot \sin(289/2000))/25, -(153 \cdot \cos(153/1000) \cdot \exp(-27/200))/80$   
 $- (6 \cdot \exp(-27/200) \cdot \sin(153/1000))/25, -(153 \cdot \cos(323/2000) \cdot \exp(-$   
 $57/400))/80 - (6 \cdot \exp(-57/400) \cdot \sin(323/2000))/25, -(153 \cdot \cos(17/100) \cdot \exp(-$   
 $3/20))/80 - (6 \cdot \exp(-3/20) \cdot \sin(17/100))/25, -(153 \cdot \cos(357/2000) \cdot \exp(-$   
 $63/400))/80 - (6 \cdot \exp(-63/400) \cdot \sin(357/2000))/25, -$   
 $(153 \cdot \cos(187/1000) \cdot \exp(-33/200))/80 - (6 \cdot \exp(-33/200) \cdot \sin(187/1000))/25,$   
 $- (153 \cdot \cos(391/2000) \cdot \exp(-69/400))/80 - (6 \cdot \exp(-$   
 $69/400) \cdot \sin(391/2000))/25, -(153 \cdot \cos(51/250) \cdot \exp(-9/50))/80 - (6 \cdot \exp(-$   
 $9/50) \cdot \sin(51/250))/25, -(153 \cdot \cos(17/80) \cdot \exp(-3/16))/80 - (6 \cdot \exp(-$   
 $3/16) \cdot \sin(17/80))/25, -(153 \cdot \cos(221/1000) \cdot \exp(-39/200))/80 - (6 \cdot \exp(-$   
 $39/200) \cdot \sin(221/1000))/25, -(153 \cdot \cos(459/2000) \cdot \exp(-81/400))/80 -$   
 $(6 \cdot \exp(-81/400) \cdot \sin(459/2000))/25, -(153 \cdot \cos(119/500) \cdot \exp(-21/100))/80 -$   
 $(6 \cdot \exp(-21/100) \cdot \sin(119/500))/25, -(153 \cdot \cos(493/2000) \cdot \exp(-87/400))/80 -$   
 $(6 \cdot \exp(-87/400) \cdot \sin(493/2000))/25, -(153 \cdot \cos(51/200) \cdot \exp(-9/40))/80 -$

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

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(-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(-

$369/400)/80 - (6*\exp(-369/400)*\sin(2091/2000))/25, -$   
 $(153*\cos(527/500)*\exp(-93/100))/80 - (6*\exp(-93/100)*\sin(527/500))/25, -$   
 $(153*\cos(17/16)*\exp(-15/16))/80 - (6*\exp(-15/16)*\sin(17/16))/25, -$   
 $(153*\cos(1071/1000)*\exp(-189/200))/80 - (6*\exp(-$   
 $189/200)*\sin(1071/1000))/25, - (153*\cos(2159/2000)*\exp(-381/400))/80 -$   
 $(6*\exp(-381/400)*\sin(2159/2000))/25, - (153*\cos(136/125)*\exp(-24/25))/80$   
 $- (6*\exp(-24/25)*\sin(136/125))/25, - (153*\cos(2193/2000)*\exp(-$   
 $387/400))/80 - (6*\exp(-387/400)*\sin(2193/2000))/25, -$   
 $(153*\cos(221/200)*\exp(-39/40))/80 - (6*\exp(-39/40)*\sin(221/200))/25, -$   
 $(153*\cos(2227/2000)*\exp(-393/400))/80 - (6*\exp(-$   
 $393/400)*\sin(2227/2000))/25, - (153*\cos(561/500)*\exp(-99/100))/80 -$   
 $(6*\exp(-99/100)*\sin(561/500))/25, - (153*\cos(2261/2000)*\exp(-399/400))/80$   
 $- (6*\exp(-399/400)*\sin(2261/2000))/25, - (153*\cos(1139/1000)*\exp(-$   
 $201/200))/80 - (6*\exp(-201/200)*\sin(1139/1000))/25, -$   
 $(153*\cos(459/400)*\exp(-81/80))/80 - (6*\exp(-81/80)*\sin(459/400))/25, -$   
 $(153*\cos(289/250)*\exp(-51/50))/80 - (6*\exp(-51/50)*\sin(289/250))/25, -$   
 $(153*\cos(2329/2000)*\exp(-411/400))/80 - (6*\exp(-$   
 $411/400)*\sin(2329/2000))/25, - (153*\cos(1173/1000)*\exp(-207/200))/80 -$   
 $(6*\exp(-207/200)*\sin(1173/1000))/25, - (153*\cos(2363/2000)*\exp(-$   
 $417/400))/80 - (6*\exp(-417/400)*\sin(2363/2000))/25, -$   
 $(153*\cos(119/100)*\exp(-21/20))/80 - (6*\exp(-21/20)*\sin(119/100))/25, -$   
 $(153*\cos(2397/2000)*\exp(-423/400))/80 - (6*\exp(-$   
 $423/400)*\sin(2397/2000))/25, - (153*\cos(1207/1000)*\exp(-213/200))/80 -$   
 $(6*\exp(-213/200)*\sin(1207/1000))/25, - (153*\cos(2431/2000)*\exp(-$   
 $429/400))/80 - (6*\exp(-429/400)*\sin(2431/2000))/25, -$   
 $(153*\cos(153/125)*\exp(-27/25))/80 - (6*\exp(-27/25)*\sin(153/125))/25, -$   
 $(153*\cos(493/400)*\exp(-87/80))/80 - (6*\exp(-87/80)*\sin(493/400))/25, -$   
 $(153*\cos(1241/1000)*\exp(-219/200))/80 - (6*\exp(-$   
 $219/200)*\sin(1241/1000))/25, - (153*\cos(2499/2000)*\exp(-441/400))/80 -$   
 $(6*\exp(-441/400)*\sin(2499/2000))/25, - (153*\cos(629/500)*\exp(-$   
 $111/100))/80 - (6*\exp(-111/100)*\sin(629/500))/25, -$   
 $(153*\cos(2533/2000)*\exp(-447/400))/80 - (6*\exp(-$   
 $447/400)*\sin(2533/2000))/25, - (153*\cos(51/40)*\exp(-9/8))/80 - (6*\exp(-$   
 $9/8)*\sin(51/40))/25, - (153*\cos(2567/2000)*\exp(-453/400))/80 - (6*\exp(-$   
 $453/400)*\sin(2567/2000))/25, - (153*\cos(323/250)*\exp(-57/50))/80 -$   
 $(6*\exp(-57/50)*\sin(323/250))/25, - (153*\cos(2601/2000)*\exp(-459/400))/80$   
 $- (6*\exp(-459/400)*\sin(2601/2000))/25, - (153*\cos(1309/1000)*\exp(-$   
 $231/200))/80 - (6*\exp(-231/200)*\sin(1309/1000))/25, -$   
 $(153*\cos(527/400)*\exp(-93/80))/80 - (6*\exp(-93/80)*\sin(527/400))/25, -$   
 $(153*\cos(663/500)*\exp(-117/100))/80 - (6*\exp(-117/100)*\sin(663/500))/25,$   
 $- (153*\cos(2669/2000)*\exp(-471/400))/80 - (6*\exp(-$   
 $471/400)*\sin(2669/2000))/25, - (153*\cos(1343/1000)*\exp(-237/200))/80 -$   
 $(6*\exp(-237/200)*\sin(1343/1000))/25, - (153*\cos(2703/2000)*\exp(-$   
 $477/400))/80 - (6*\exp(-477/400)*\sin(2703/2000))/25, -$   
 $(153*\cos(34/25)*\exp(-6/5))/80 - (6*\exp(-6/5)*\sin(34/25))/25, -$   
 $(153*\cos(2737/2000)*\exp(-483/400))/80 - (6*\exp(-$   
 $483/400)*\sin(2737/2000))/25, - (153*\cos(1377/1000)*\exp(-243/200))/80 -$   
 $(6*\exp(-243/200)*\sin(1377/1000))/25, - (153*\cos(2771/2000)*\exp(-$   
 $489/400))/80 - (6*\exp(-489/400)*\sin(2771/2000))/25, -$   
 $(153*\cos(697/500)*\exp(-123/100))/80 - (6*\exp(-123/100)*\sin(697/500))/25,$   
 $- (153*\cos(561/400)*\exp(-99/80))/80 - (6*\exp(-99/80)*\sin(561/400))/25, -$   
 $(153*\cos(1411/1000)*\exp(-249/200))/80 - (6*\exp(-$   
 $249/200)*\sin(1411/1000))/25, - (153*\cos(2839/2000)*\exp(-501/400))/80 -$   
 $(6*\exp(-501/400)*\sin(2839/2000))/25, - (153*\cos(357/250)*\exp(-63/50))/80$



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

$$\begin{aligned}
& (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, - (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]
\end{aligned}$$

>>

graphs:

```
question 4c
commandwindow
clear
clc
close all
syms x
y=5*(sin(5*x))^5
a=y^2
aint=int(a)
aintd=int(a,0,(22/7))
aintdd=double(aintd)
v=(22/7)*aintdd
```

answer log:

```
y =5*sin(5*x)^5
a =25*sin(5*x)^10
aint =(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
aintd =(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
aintdd =19.3282
v = 60.7456
```