

Question 4a.

```
1. commandwindow
2. clear
3. clc
4. A=[0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]
5. B=[-4;2;6;4]
6. D= inv(A) * B
```

Commandwindow

A =

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

B =

```
-4
2
6
4
```

D =

4.0000

-0.0000

2.0000

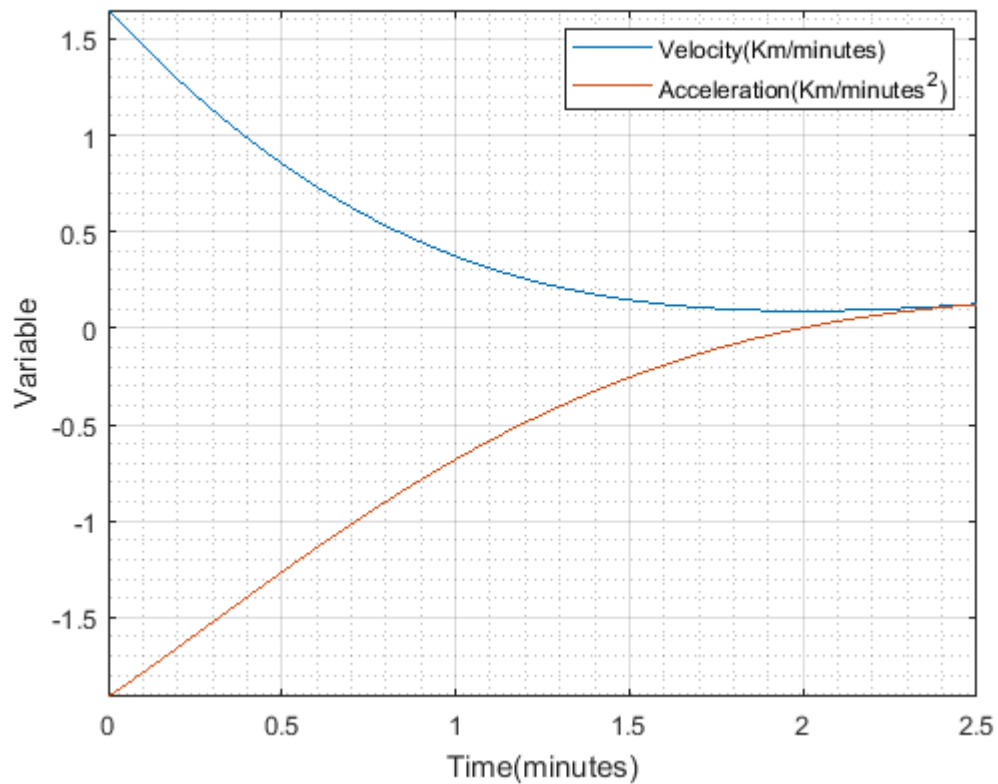
6.0000

---

*Published with MATLAB® R2017a*

Question 4b.

```
1. commandwindow
2. clear
3. clc
4. close all
5. syms t
6. d = 1.5*exp(-0.75*t)*sin(0.85*t)+0.375*t
7. xn = [0:0.01:2.5]
8. yn = subs(d,xn)
9. yh = diff(d)
10. df = subs(yh,xn)
11. ku = diff(yh)
12. de = subs(ku,xn)
13. figure(1)
14. plot(xn,df,xn,de)
15. axis tight
16. grid on
17. grid minor
18. xlabel('Time(minutes)')
19. ylabel('Variable')
20. legend('Velocity(Km/minutes)', 'Acceleration(Km/minutes^2)', 'location', 'Best')
```



Commandwindow

d =

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

xn =

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

yn =

```
[ 0, (3*exp(-3/400)*sin(17/2000))/2 + 3/800, (3*exp(-3/200)*sin(17/1000))/2 + 3/400,
(3*exp(-9/400)*sin(51/2000))/2 + 9/800, (3*exp(-3/100)*sin(17/500))/2 + 3/200, (3*exp(-
3/80)*sin(17/400))/2 + 3/160, (3*exp(-9/200)*sin(51/1000))/2 + 9/400, (3*exp(-
21/400)*sin(119/2000))/2 + 21/800, (3*exp(-3/50)*sin(17/250))/2 + 3/100, (3*exp(-
27/400)*sin(153/2000))/2 + 27/800, (3*exp(-3/40)*sin(17/200))/2 + 3/80, (3*exp(-
33/400)*sin(187/2000))/2 + 33/800, (3*exp(-9/100)*sin(51/500))/2 + 9/200, (3*exp(-
39/400)*sin(221/2000))/2 + 39/800, (3*exp(-21/200)*sin(119/1000))/2 + 21/400, (3*exp(-
9/80)*sin(51/400))/2 + 9/160, (3*exp(-3/25)*sin(17/125))/2 + 3/50, (3*exp(-
51/400)*sin(289/2000))/2 + 51/800, (3*exp(-27/200)*sin(153/1000))/2 + 27/400, (3*exp(-
57/400)*sin(323/2000))/2 + 57/800, (3*exp(-3/20)*sin(17/100))/2 + 3/40, (3*exp(-
63/400)*sin(357/2000))/2 + 63/800, (3*exp(-33/200)*sin(187/1000))/2 + 33/400, (3*exp(-
69/400)*sin(391/2000))/2 + 69/800, (3*exp(-9/50)*sin(51/250))/2 + 9/100, (3*exp(-
3/16)*sin(17/80))/2 + 3/32, (3*exp(-39/200)*sin(221/1000))/2 + 39/400, (3*exp(-
81/400)*sin(459/2000))/2 + 81/800, (3*exp(-21/100)*sin(119/500))/2 + 21/200, (3*exp(-
87/400)*sin(493/2000))/2 + 87/800, (3*exp(-9/40)*sin(51/200))/2 + 9/80, (3*exp(-
93/400)*sin(527/2000))/2 + 93/800, (3*exp(-6/25)*sin(34/125))/2 + 3/25, (3*exp(-
99/400)*sin(561/2000))/2 + 99/800, (3*exp(-51/200)*sin(289/1000))/2 + 51/400, (3*exp(-
21/80)*sin(119/400))/2 + 21/160, (3*exp(-27/100)*sin(153/500))/2 + 27/200, (3*exp(-
111/400)*sin(629/2000))/2 + 111/800, (3*exp(-57/200)*sin(323/1000))/2 + 57/400,
(3*exp(-117/400)*sin(663/2000))/2 + 117/800, (3*exp(-3/10)*sin(17/50))/2 + 3/20,
(3*exp(-123/400)*sin(697/2000))/2 + 123/800, (3*exp(-63/200)*sin(357/1000))/2 + 63/400,
(3*exp(-129/400)*sin(731/2000))/2 + 129/800, (3*exp(-33/100)*sin(187/500))/2 + 33/200,
(3*exp(-27/80)*sin(153/400))/2 + 27/160, (3*exp(-69/200)*sin(391/1000))/2 + 69/400,
(3*exp(-141/400)*sin(799/2000))/2 + 141/800, (3*exp(-9/25)*sin(51/125))/2 + 9/50,
(3*exp(-147/400)*sin(833/2000))/2 + 147/800, (3*exp(-3/8)*sin(17/40))/2 + 3/16,
(3*exp(-153/400)*sin(867/2000))/2 + 153/800, (3*exp(-39/100)*sin(221/500))/2 + 39/200,
(3*exp(-159/400)*sin(901/2000))/2 + 159/800, (3*exp(-81/200)*sin(459/1000))/2 + 81/400,
```

$(3*\exp(-33/80)*\sin(187/400))/2 + 33/160, (3*\exp(-21/50)*\sin(119/250))/2 + 21/100,$   
 $(3*\exp(-171/400)*\sin(969/2000))/2 + 171/800, (3*\exp(-87/200)*\sin(493/1000))/2 + 87/400,$   
 $(3*\exp(-177/400)*\sin(1003/2000))/2 + 177/800, (3*\exp(-9/20)*\sin(51/100))/2 + 9/40,$   
 $(3*\exp(-183/400)*\sin(1037/2000))/2 + 183/800, (3*\exp(-93/200)*\sin(527/1000))/2 +$   
 $93/400, (3*\exp(-189/400)*\sin(1071/2000))/2 + 189/800, (3*\exp(-12/25)*\sin(68/125))/2 +$   
 $6/25, (3*\exp(-39/80)*\sin(221/400))/2 + 39/160, (3*\exp(-99/200)*\sin(561/1000))/2 +$   
 $99/400, (3*\exp(-201/400)*\sin(1139/2000))/2 + 201/800, (3*\exp(-51/100)*\sin(289/500))/2 +$   
 $51/200, (3*\exp(-207/400)*\sin(1173/2000))/2 + 207/800, (3*\exp(-21/40)*\sin(119/200))/2 +$   
 $21/80, (3*\exp(-213/400)*\sin(1207/2000))/2 + 213/800, (3*\exp(-27/50)*\sin(153/250))/2 +$   
 $27/100, (3*\exp(-219/400)*\sin(1241/2000))/2 + 219/800, (3*\exp(-111/200)*\sin(629/1000))/2$   
 $+ 111/400, (3*\exp(-9/16)*\sin(51/80))/2 + 9/32, (3*\exp(-57/100)*\sin(323/500))/2 +$   
 $57/200, (3*\exp(-231/400)*\sin(1309/2000))/2 + 231/800, (3*\exp(-117/200)*\sin(663/1000))/2$   
 $+ 117/400, (3*\exp(-237/400)*\sin(1343/2000))/2 + 237/800, (3*\exp(-3/5)*\sin(17/25))/2 +$   
 $3/10, (3*\exp(-243/400)*\sin(1377/2000))/2 + 243/800, (3*\exp(-123/200)*\sin(697/1000))/2 +$   
 $123/400, (3*\exp(-249/400)*\sin(1411/2000))/2 + 249/800, (3*\exp(-63/100)*\sin(357/500))/2$   
 $+ 63/200, (3*\exp(-51/80)*\sin(289/400))/2 + 51/160, (3*\exp(-129/200)*\sin(731/1000))/2 +$   
 $129/400, (3*\exp(-261/400)*\sin(1479/2000))/2 + 261/800, (3*\exp(-33/50)*\sin(187/250))/2 +$   
 $33/100, (3*\exp(-267/400)*\sin(1513/2000))/2 + 267/800, (3*\exp(-27/40)*\sin(153/200))/2 +$   
 $27/80, (3*\exp(-273/400)*\sin(1547/2000))/2 + 273/800, (3*\exp(-69/100)*\sin(391/500))/2 +$   
 $69/200, (3*\exp(-279/400)*\sin(1581/2000))/2 + 279/800, (3*\exp(-141/200)*\sin(799/1000))/2$   
 $+ 141/400, (3*\exp(-57/80)*\sin(323/400))/2 + 57/160, (3*\exp(-18/25)*\sin(102/125))/2 +$   
 $9/25, (3*\exp(-291/400)*\sin(1649/2000))/2 + 291/800, (3*\exp(-147/200)*\sin(833/1000))/2 +$   
 $147/400, (3*\exp(-297/400)*\sin(1683/2000))/2 + 297/800, (3*\exp(-3/4)*\sin(17/20))/2 +$   
 $3/8, (3*\exp(-303/400)*\sin(1717/2000))/2 + 303/800, (3*\exp(-153/200)*\sin(867/1000))/2 +$   
 $153/400, (3*\exp(-309/400)*\sin(1751/2000))/2 + 309/800, (3*\exp(-39/50)*\sin(221/250))/2 +$   
 $39/100, (3*\exp(-63/80)*\sin(357/400))/2 + 63/160, (3*\exp(-159/200)*\sin(901/1000))/2 +$   
 $159/400, (3*\exp(-321/400)*\sin(1819/2000))/2 + 321/800, (3*\exp(-81/100)*\sin(459/500))/2$   
 $+ 81/200, (3*\exp(-327/400)*\sin(1853/2000))/2 + 327/800, (3*\exp(-33/40)*\sin(187/200))/2$   
 $+ 33/80, (3*\exp(-333/400)*\sin(1887/2000))/2 + 333/800, (3*\exp(-21/25)*\sin(119/125))/2 +$   
 $21/50, (3*\exp(-339/400)*\sin(1921/2000))/2 + 339/800, (3*\exp(-171/200)*\sin(969/1000))/2$   
 $+ 171/400, (3*\exp(-69/80)*\sin(391/400))/2 + 69/160, (3*\exp(-87/100)*\sin(493/500))/2 +$   
 $87/200, (3*\exp(-351/400)*\sin(1989/2000))/2 + 351/800, (3*\exp(-$   
 $177/200)*\sin(1003/1000))/2 + 177/400, (3*\exp(-357/400)*\sin(2023/2000))/2 + 357/800,$   
 $(3*\exp(-9/10)*\sin(51/50))/2 + 9/20, (3*\exp(-363/400)*\sin(2057/2000))/2 + 363/800,$   
 $(3*\exp(-183/200)*\sin(1037/1000))/2 + 183/400, (3*\exp(-369/400)*\sin(2091/2000))/2 +$   
 $369/800, (3*\exp(-93/100)*\sin(527/500))/2 + 93/200, (3*\exp(-15/16)*\sin(17/16))/2 +$   
 $15/32, (3*\exp(-189/200)*\sin(1071/1000))/2 + 189/400, (3*\exp(-381/400)*\sin(2159/2000))/2$   
 $+ 381/800, (3*\exp(-24/25)*\sin(136/125))/2 + 12/25, (3*\exp(-387/400)*\sin(2193/2000))/2 +$   
 $387/800, (3*\exp(-39/40)*\sin(221/200))/2 + 39/80, (3*\exp(-393/400)*\sin(2227/2000))/2 +$   
 $393/800, (3*\exp(-99/100)*\sin(561/500))/2 + 99/200, (3*\exp(-399/400)*\sin(2261/2000))/2 +$   
 $399/800, (3*\exp(-201/200)*\sin(1139/1000))/2 + 201/400, (3*\exp(-81/80)*\sin(459/400))/2 +$   
 $81/160, (3*\exp(-51/50)*\sin(289/250))/2 + 51/100, (3*\exp(-411/400)*\sin(2329/2000))/2 +$   
 $411/800, (3*\exp(-207/200)*\sin(1173/1000))/2 + 207/400, (3*\exp(-$   
 $417/400)*\sin(2363/2000))/2 + 417/800, (3*\exp(-21/20)*\sin(119/100))/2 + 21/40, (3*\exp(-$   
 $423/400)*\sin(2397/2000))/2 + 423/800, (3*\exp(-213/200)*\sin(1207/1000))/2 + 213/400,$   
 $(3*\exp(-429/400)*\sin(2431/2000))/2 + 429/800, (3*\exp(-27/25)*\sin(153/125))/2 + 27/50,$   
 $(3*\exp(-87/80)*\sin(493/400))/2 + 87/160, (3*\exp(-219/200)*\sin(1241/1000))/2 + 219/400,$   
 $(3*\exp(-441/400)*\sin(2499/2000))/2 + 441/800, (3*\exp(-111/100)*\sin(629/500))/2 +$   
 $111/200, (3*\exp(-447/400)*\sin(2533/2000))/2 + 447/800, (3*\exp(-9/8)*\sin(51/40))/2 +$   
 $9/16, (3*\exp(-453/400)*\sin(2567/2000))/2 + 453/800, (3*\exp(-57/50)*\sin(323/250))/2 +$   
 $57/100, (3*\exp(-459/400)*\sin(2601/2000))/2 + 459/800, (3*\exp(-$

231/200)\*sin(1309/1000))/2 + 231/400, (3\*exp(-93/80)\*sin(527/400))/2 + 93/160, (3\*exp(-117/100)\*sin(663/500))/2 + 117/200, (3\*exp(-471/400)\*sin(2669/2000))/2 + 471/800, (3\*exp(-237/200)\*sin(1343/1000))/2 + 237/400, (3\*exp(-477/400)\*sin(2703/2000))/2 + 477/800, (3\*exp(-6/5)\*sin(34/25))/2 + 3/5, (3\*exp(-483/400)\*sin(2737/2000))/2 + 483/800, (3\*exp(-243/200)\*sin(1377/1000))/2 + 243/400, (3\*exp(-489/400)\*sin(2771/2000))/2 + 489/800, (3\*exp(-123/100)\*sin(697/500))/2 + 123/200, (3\*exp(-99/80)\*sin(561/400))/2 + 99/160, (3\*exp(-249/200)\*sin(1411/1000))/2 + 249/400, (3\*exp(-501/400)\*sin(2839/2000))/2 + 501/800, (3\*exp(-63/50)\*sin(357/250))/2 + 63/100, (3\*exp(-507/400)\*sin(2873/2000))/2 + 507/800, (3\*exp(-51/40)\*sin(289/200))/2 + 51/80, (3\*exp(-513/400)\*sin(2907/2000))/2 + 513/800, (3\*exp(-129/100)\*sin(731/500))/2 + 129/200, (3\*exp(-519/400)\*sin(2941/2000))/2 + 519/800, (3\*exp(-261/200)\*sin(1479/1000))/2 + 261/400, (3\*exp(-21/16)\*sin(119/80))/2 + 21/32, (3\*exp(-33/25)\*sin(187/125))/2 + 33/50, (3\*exp(-531/400)\*sin(3009/2000))/2 + 531/800, (3\*exp(-267/200)\*sin(1513/1000))/2 + 267/400, (3\*exp(-537/400)\*sin(3043/2000))/2 + 537/800, (3\*exp(-27/20)\*sin(153/100))/2 + 27/40, (3\*exp(-543/400)\*sin(3077/2000))/2 + 543/800, (3\*exp(-273/200)\*sin(1547/1000))/2 + 273/400, (3\*exp(-549/400)\*sin(3111/2000))/2 + 549/800, (3\*exp(-69/50)\*sin(391/250))/2 + 69/100, (3\*exp(-111/80)\*sin(629/400))/2 + 111/160, (3\*exp(-279/200)\*sin(1581/1000))/2 + 279/400, (3\*exp(-561/400)\*sin(3179/2000))/2 + 561/800, (3\*exp(-141/100)\*sin(799/500))/2 + 141/200, (3\*exp(-567/400)\*sin(3213/2000))/2 + 567/800, (3\*exp(-57/40)\*sin(323/200))/2 + 57/80, (3\*exp(-573/400)\*sin(3247/2000))/2 + 573/800, (3\*exp(-36/25)\*sin(204/125))/2 + 18/25, (3\*exp(-579/400)\*sin(3281/2000))/2 + 579/800, (3\*exp(-291/200)\*sin(1649/1000))/2 + 291/400, (3\*exp(-117/80)\*sin(663/400))/2 + 117/160, (3\*exp(-147/100)\*sin(833/500))/2 + 147/200, (3\*exp(-591/400)\*sin(3349/2000))/2 + 591/800, (3\*exp(-297/200)\*sin(1683/1000))/2 + 297/400, (3\*exp(-597/400)\*sin(3383/2000))/2 + 597/800, (3\*exp(-3/2)\*sin(17/10))/2 + 3/4, (3\*exp(-603/400)\*sin(3417/2000))/2 + 603/800, (3\*exp(-303/200)\*sin(1717/1000))/2 + 303/400, (3\*exp(-609/400)\*sin(3451/2000))/2 + 609/800, (3\*exp(-153/100)\*sin(867/500))/2 + 153/200, (3\*exp(-123/80)\*sin(697/400))/2 + 123/160, (3\*exp(-309/200)\*sin(1751/1000))/2 + 309/400, (3\*exp(-621/400)\*sin(3519/2000))/2 + 621/800, (3\*exp(-39/25)\*sin(221/125))/2 + 39/50, (3\*exp(-627/400)\*sin(3553/2000))/2 + 627/800, (3\*exp(-63/40)\*sin(357/200))/2 + 63/80, (3\*exp(-633/400)\*sin(3587/2000))/2 + 633/800, (3\*exp(-159/100)\*sin(901/500))/2 + 159/200, (3\*exp(-639/400)\*sin(3621/2000))/2 + 639/800, (3\*exp(-321/200)\*sin(1819/1000))/2 + 321/400, (3\*exp(-129/80)\*sin(731/400))/2 + 129/160, (3\*exp(-81/50)\*sin(459/250))/2 + 81/100, (3\*exp(-651/400)\*sin(3689/2000))/2 + 651/800, (3\*exp(-327/200)\*sin(1853/1000))/2 + 327/400, (3\*exp(-657/400)\*sin(3723/2000))/2 + 657/800, (3\*exp(-33/20)\*sin(187/100))/2 + 33/40, (3\*exp(-663/400)\*sin(3757/2000))/2 + 663/800, (3\*exp(-333/200)\*sin(1887/1000))/2 + 333/400, (3\*exp(-669/400)\*sin(3791/2000))/2 + 669/800, (3\*exp(-42/25)\*sin(238/125))/2 + 21/25, (3\*exp(-27/16)\*sin(153/80))/2 + 27/32, (3\*exp(-339/200)\*sin(1921/1000))/2 + 339/400, (3\*exp(-681/400)\*sin(3859/2000))/2 + 681/800, (3\*exp(-171/100)\*sin(969/500))/2 + 171/200, (3\*exp(-687/400)\*sin(3893/2000))/2 + 687/800, (3\*exp(-69/40)\*sin(391/200))/2 + 69/80, (3\*exp(-693/400)\*sin(3927/2000))/2 + 693/800, (3\*exp(-87/50)\*sin(493/250))/2 + 87/100, (3\*exp(-699/400)\*sin(3961/2000))/2 + 699/800, (3\*exp(-351/200)\*sin(1989/1000))/2 + 351/400, (3\*exp(-141/80)\*sin(799/400))/2 + 141/160, (3\*exp(-177/100)\*sin(1003/500))/2 + 177/200, (3\*exp(-711/400)\*sin(4029/2000))/2 + 711/800, (3\*exp(-357/200)\*sin(2023/1000))/2 + 357/400, (3\*exp(-717/400)\*sin(4063/2000))/2 + 717/800, (3\*exp(-9/5)\*sin(51/25))/2 + 9/10, (3\*exp(-723/400)\*sin(4097/2000))/2 + 723/800, (3\*exp(-363/200)\*sin(2057/1000))/2 + 363/400, (3\*exp(-729/400)\*sin(4131/2000))/2 + 729/800, (3\*exp(-183/100)\*sin(1037/500))/2 + 183/200, (3\*exp(-147/80)\*sin(833/400))/2 + 147/160, (3\*exp(-369/200)\*sin(2091/1000))/2 + 369/400, (3\*exp(-741/400)\*sin(4199/2000))/2 +

741/800, (3\*exp(-93/50)\*sin(527/250))/2 + 93/100, (3\*exp(-747/400)\*sin(4233/2000))/2 + 747/800, (3\*exp(-15/8)\*sin(17/8))/2 + 15/16]

yh =

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

df =

[ 33/20, (51\*cos(17/2000)\*exp(-3/400))/40 - (9\*exp(-3/400)\*sin(17/2000))/8 + 3/8,  
(51\*cos(17/1000)\*exp(-3/200))/40 - (9\*exp(-3/200)\*sin(17/1000))/8 + 3/8,  
(51\*cos(51/2000)\*exp(-9/400))/40 - (9\*exp(-9/400)\*sin(51/2000))/8 + 3/8,  
(51\*cos(17/500)\*exp(-3/100))/40 - (9\*exp(-3/100)\*sin(17/500))/8 + 3/8,  
(51\*cos(17/400)\*exp(-3/80))/40 - (9\*exp(-3/80)\*sin(17/400))/8 + 3/8,  
(51\*cos(51/1000)\*exp(-9/200))/40 - (9\*exp(-9/200)\*sin(51/1000))/8 + 3/8,  
(51\*cos(119/2000)\*exp(-21/400))/40 - (9\*exp(-21/400)\*sin(119/2000))/8 + 3/8,  
(51\*cos(17/250)\*exp(-3/50))/40 - (9\*exp(-3/50)\*sin(17/250))/8 + 3/8,  
(51\*cos(153/2000)\*exp(-27/400))/40 - (9\*exp(-27/400)\*sin(153/2000))/8 + 3/8,  
(51\*cos(17/200)\*exp(-3/40))/40 - (9\*exp(-3/40)\*sin(17/200))/8 + 3/8,  
(51\*cos(187/2000)\*exp(-33/400))/40 - (9\*exp(-33/400)\*sin(187/2000))/8 + 3/8,  
(51\*cos(51/500)\*exp(-9/100))/40 - (9\*exp(-9/100)\*sin(51/500))/8 + 3/8,  
(51\*cos(221/2000)\*exp(-39/400))/40 - (9\*exp(-39/400)\*sin(221/2000))/8 + 3/8,  
(51\*cos(119/1000)\*exp(-21/200))/40 - (9\*exp(-21/200)\*sin(119/1000))/8 + 3/8,  
(51\*cos(51/400)\*exp(-9/80))/40 - (9\*exp(-9/80)\*sin(51/400))/8 + 3/8,  
(51\*cos(17/125)\*exp(-3/25))/40 - (9\*exp(-3/25)\*sin(17/125))/8 + 3/8,  
(51\*cos(289/2000)\*exp(-51/400))/40 - (9\*exp(-51/400)\*sin(289/2000))/8 + 3/8,  
(51\*cos(153/1000)\*exp(-27/200))/40 - (9\*exp(-27/200)\*sin(153/1000))/8 + 3/8,  
(51\*cos(323/2000)\*exp(-57/400))/40 - (9\*exp(-57/400)\*sin(323/2000))/8 + 3/8,  
(51\*cos(17/100)\*exp(-3/20))/40 - (9\*exp(-3/20)\*sin(17/100))/8 + 3/8,  
(51\*cos(357/2000)\*exp(-63/400))/40 - (9\*exp(-63/400)\*sin(357/2000))/8 + 3/8,  
(51\*cos(187/1000)\*exp(-33/200))/40 - (9\*exp(-33/200)\*sin(187/1000))/8 + 3/8,  
(51\*cos(391/2000)\*exp(-69/400))/40 - (9\*exp(-69/400)\*sin(391/2000))/8 + 3/8,  
(51\*cos(51/250)\*exp(-9/50))/40 - (9\*exp(-9/50)\*sin(51/250))/8 + 3/8,  
(51\*cos(17/80)\*exp(-3/16))/40 - (9\*exp(-3/16)\*sin(17/80))/8 + 3/8,  
(51\*cos(221/1000)\*exp(-39/200))/40 - (9\*exp(-39/200)\*sin(221/1000))/8 + 3/8,  
(51\*cos(459/2000)\*exp(-81/400))/40 - (9\*exp(-81/400)\*sin(459/2000))/8 + 3/8,  
(51\*cos(119/500)\*exp(-21/100))/40 - (9\*exp(-21/100)\*sin(119/500))/8 + 3/8,

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

$(51*\cos(17/25)*\exp(-3/5))/40 - (9*\exp(-3/5)*\sin(17/25))/8 + 3/8,$   
 $(51*\cos(1377/2000)*\exp(-243/400))/40 - (9*\exp(-243/400)*\sin(1377/2000))/8 + 3/8,$   
 $(51*\cos(697/1000)*\exp(-123/200))/40 - (9*\exp(-123/200)*\sin(697/1000))/8 + 3/8,$   
 $(51*\cos(1411/2000)*\exp(-249/400))/40 - (9*\exp(-249/400)*\sin(1411/2000))/8 + 3/8,$   
 $(51*\cos(357/500)*\exp(-63/100))/40 - (9*\exp(-63/100)*\sin(357/500))/8 + 3/8,$   
 $(51*\cos(289/400)*\exp(-51/80))/40 - (9*\exp(-51/80)*\sin(289/400))/8 + 3/8,$   
 $(51*\cos(731/1000)*\exp(-129/200))/40 - (9*\exp(-129/200)*\sin(731/1000))/8 + 3/8,$   
 $(51*\cos(1479/2000)*\exp(-261/400))/40 - (9*\exp(-261/400)*\sin(1479/2000))/8 + 3/8,$   
 $(51*\cos(187/250)*\exp(-33/50))/40 - (9*\exp(-33/50)*\sin(187/250))/8 + 3/8,$   
 $(51*\cos(1513/2000)*\exp(-267/400))/40 - (9*\exp(-267/400)*\sin(1513/2000))/8 + 3/8,$   
 $(51*\cos(153/200)*\exp(-27/40))/40 - (9*\exp(-27/40)*\sin(153/200))/8 + 3/8,$   
 $(51*\cos(1547/2000)*\exp(-273/400))/40 - (9*\exp(-273/400)*\sin(1547/2000))/8 + 3/8,$   
 $(51*\cos(391/500)*\exp(-69/100))/40 - (9*\exp(-69/100)*\sin(391/500))/8 + 3/8,$   
 $(51*\cos(1581/2000)*\exp(-279/400))/40 - (9*\exp(-279/400)*\sin(1581/2000))/8 + 3/8,$   
 $(51*\cos(799/1000)*\exp(-141/200))/40 - (9*\exp(-141/200)*\sin(799/1000))/8 + 3/8,$   
 $(51*\cos(323/400)*\exp(-57/80))/40 - (9*\exp(-57/80)*\sin(323/400))/8 + 3/8,$   
 $(51*\cos(102/125)*\exp(-18/25))/40 - (9*\exp(-18/25)*\sin(102/125))/8 + 3/8,$   
 $(51*\cos(1649/2000)*\exp(-291/400))/40 - (9*\exp(-291/400)*\sin(1649/2000))/8 + 3/8,$   
 $(51*\cos(833/1000)*\exp(-147/200))/40 - (9*\exp(-147/200)*\sin(833/1000))/8 + 3/8,$   
 $(51*\cos(1683/2000)*\exp(-297/400))/40 - (9*\exp(-297/400)*\sin(1683/2000))/8 + 3/8,$   
 $(51*\cos(17/20)*\exp(-3/4))/40 - (9*\exp(-3/4)*\sin(17/20))/8 + 3/8,$   
 $(51*\cos(1717/2000)*\exp(-303/400))/40 - (9*\exp(-303/400)*\sin(1717/2000))/8 + 3/8,$   
 $(51*\cos(867/1000)*\exp(-153/200))/40 - (9*\exp(-153/200)*\sin(867/1000))/8 + 3/8,$   
 $(51*\cos(1751/2000)*\exp(-309/400))/40 - (9*\exp(-309/400)*\sin(1751/2000))/8 + 3/8,$   
 $(51*\cos(221/250)*\exp(-39/50))/40 - (9*\exp(-39/50)*\sin(221/250))/8 + 3/8,$   
 $(51*\cos(357/400)*\exp(-63/80))/40 - (9*\exp(-63/80)*\sin(357/400))/8 + 3/8,$   
 $(51*\cos(901/1000)*\exp(-159/200))/40 - (9*\exp(-159/200)*\sin(901/1000))/8 + 3/8,$   
 $(51*\cos(1819/2000)*\exp(-321/400))/40 - (9*\exp(-321/400)*\sin(1819/2000))/8 + 3/8,$   
 $(51*\cos(459/500)*\exp(-81/100))/40 - (9*\exp(-81/100)*\sin(459/500))/8 + 3/8,$   
 $(51*\cos(1853/2000)*\exp(-327/400))/40 - (9*\exp(-327/400)*\sin(1853/2000))/8 + 3/8,$   
 $(51*\cos(187/200)*\exp(-33/40))/40 - (9*\exp(-33/40)*\sin(187/200))/8 + 3/8,$   
 $(51*\cos(1887/2000)*\exp(-333/400))/40 - (9*\exp(-333/400)*\sin(1887/2000))/8 + 3/8,$   
 $(51*\cos(119/125)*\exp(-21/25))/40 - (9*\exp(-21/25)*\sin(119/125))/8 + 3/8,$   
 $(51*\cos(1921/2000)*\exp(-339/400))/40 - (9*\exp(-339/400)*\sin(1921/2000))/8 + 3/8,$   
 $(51*\cos(969/1000)*\exp(-171/200))/40 - (9*\exp(-171/200)*\sin(969/1000))/8 + 3/8,$   
 $(51*\cos(391/400)*\exp(-69/80))/40 - (9*\exp(-69/80)*\sin(391/400))/8 + 3/8,$   
 $(51*\cos(493/500)*\exp(-87/100))/40 - (9*\exp(-87/100)*\sin(493/500))/8 + 3/8,$   
 $(51*\cos(1989/2000)*\exp(-351/400))/40 - (9*\exp(-351/400)*\sin(1989/2000))/8 + 3/8,$   
 $(51*\cos(1003/1000)*\exp(-177/200))/40 - (9*\exp(-177/200)*\sin(1003/1000))/8 + 3/8,$   
 $(51*\cos(2023/2000)*\exp(-357/400))/40 - (9*\exp(-357/400)*\sin(2023/2000))/8 + 3/8,$   
 $(51*\cos(51/50)*\exp(-9/10))/40 - (9*\exp(-9/10)*\sin(51/50))/8 + 3/8,$   
 $(51*\cos(2057/2000)*\exp(-363/400))/40 - (9*\exp(-363/400)*\sin(2057/2000))/8 + 3/8,$   
 $(51*\cos(1037/1000)*\exp(-183/200))/40 - (9*\exp(-183/200)*\sin(1037/1000))/8 + 3/8,$   
 $(51*\cos(2091/2000)*\exp(-369/400))/40 - (9*\exp(-369/400)*\sin(2091/2000))/8 + 3/8,$   
 $(51*\cos(527/500)*\exp(-93/100))/40 - (9*\exp(-93/100)*\sin(527/500))/8 + 3/8,$   
 $(51*\cos(17/16)*\exp(-15/16))/40 - (9*\exp(-15/16)*\sin(17/16))/8 + 3/8,$   
 $(51*\cos(1071/1000)*\exp(-189/200))/40 - (9*\exp(-189/200)*\sin(1071/1000))/8 + 3/8,$   
 $(51*\cos(2159/2000)*\exp(-381/400))/40 - (9*\exp(-381/400)*\sin(2159/2000))/8 + 3/8,$   
 $(51*\cos(136/125)*\exp(-24/25))/40 - (9*\exp(-24/25)*\sin(136/125))/8 + 3/8,$   
 $(51*\cos(2193/2000)*\exp(-387/400))/40 - (9*\exp(-387/400)*\sin(2193/2000))/8 + 3/8,$   
 $(51*\cos(221/200)*\exp(-39/40))/40 - (9*\exp(-39/40)*\sin(221/200))/8 + 3/8,$

$(51 \cdot \cos(2227/2000) \cdot \exp(-393/400))/40 - (9 \cdot \exp(-393/400) \cdot \sin(2227/2000))/8 + 3/8,$   
 $(51 \cdot \cos(561/500) \cdot \exp(-99/100))/40 - (9 \cdot \exp(-99/100) \cdot \sin(561/500))/8 + 3/8,$   
 $(51 \cdot \cos(2261/2000) \cdot \exp(-399/400))/40 - (9 \cdot \exp(-399/400) \cdot \sin(2261/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1139/1000) \cdot \exp(-201/200))/40 - (9 \cdot \exp(-201/200) \cdot \sin(1139/1000))/8 + 3/8,$   
 $(51 \cdot \cos(459/400) \cdot \exp(-81/80))/40 - (9 \cdot \exp(-81/80) \cdot \sin(459/400))/8 + 3/8,$   
 $(51 \cdot \cos(289/250) \cdot \exp(-51/50))/40 - (9 \cdot \exp(-51/50) \cdot \sin(289/250))/8 + 3/8,$   
 $(51 \cdot \cos(2329/2000) \cdot \exp(-411/400))/40 - (9 \cdot \exp(-411/400) \cdot \sin(2329/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1173/1000) \cdot \exp(-207/200))/40 - (9 \cdot \exp(-207/200) \cdot \sin(1173/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2363/2000) \cdot \exp(-417/400))/40 - (9 \cdot \exp(-417/400) \cdot \sin(2363/2000))/8 + 3/8,$   
 $(51 \cdot \cos(119/100) \cdot \exp(-21/20))/40 - (9 \cdot \exp(-21/20) \cdot \sin(119/100))/8 + 3/8,$   
 $(51 \cdot \cos(2397/2000) \cdot \exp(-423/400))/40 - (9 \cdot \exp(-423/400) \cdot \sin(2397/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1207/1000) \cdot \exp(-213/200))/40 - (9 \cdot \exp(-213/200) \cdot \sin(1207/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2431/2000) \cdot \exp(-429/400))/40 - (9 \cdot \exp(-429/400) \cdot \sin(2431/2000))/8 + 3/8,$   
 $(51 \cdot \cos(153/125) \cdot \exp(-27/25))/40 - (9 \cdot \exp(-27/25) \cdot \sin(153/125))/8 + 3/8,$   
 $(51 \cdot \cos(493/400) \cdot \exp(-87/80))/40 - (9 \cdot \exp(-87/80) \cdot \sin(493/400))/8 + 3/8,$   
 $(51 \cdot \cos(1241/1000) \cdot \exp(-219/200))/40 - (9 \cdot \exp(-219/200) \cdot \sin(1241/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2499/2000) \cdot \exp(-441/400))/40 - (9 \cdot \exp(-441/400) \cdot \sin(2499/2000))/8 + 3/8,$   
 $(51 \cdot \cos(629/500) \cdot \exp(-111/100))/40 - (9 \cdot \exp(-111/100) \cdot \sin(629/500))/8 + 3/8,$   
 $(51 \cdot \cos(2533/2000) \cdot \exp(-447/400))/40 - (9 \cdot \exp(-447/400) \cdot \sin(2533/2000))/8 + 3/8,$   
 $(51 \cdot \cos(51/40) \cdot \exp(-9/8))/40 - (9 \cdot \exp(-9/8) \cdot \sin(51/40))/8 + 3/8,$   
 $(51 \cdot \cos(2567/2000) \cdot \exp(-453/400))/40 - (9 \cdot \exp(-453/400) \cdot \sin(2567/2000))/8 + 3/8,$   
 $(51 \cdot \cos(323/250) \cdot \exp(-57/50))/40 - (9 \cdot \exp(-57/50) \cdot \sin(323/250))/8 + 3/8,$   
 $(51 \cdot \cos(2601/2000) \cdot \exp(-459/400))/40 - (9 \cdot \exp(-459/400) \cdot \sin(2601/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1309/1000) \cdot \exp(-231/200))/40 - (9 \cdot \exp(-231/200) \cdot \sin(1309/1000))/8 + 3/8,$   
 $(51 \cdot \cos(527/400) \cdot \exp(-93/80))/40 - (9 \cdot \exp(-93/80) \cdot \sin(527/400))/8 + 3/8,$   
 $(51 \cdot \cos(663/500) \cdot \exp(-117/100))/40 - (9 \cdot \exp(-117/100) \cdot \sin(663/500))/8 + 3/8,$   
 $(51 \cdot \cos(2669/2000) \cdot \exp(-471/400))/40 - (9 \cdot \exp(-471/400) \cdot \sin(2669/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1343/1000) \cdot \exp(-237/200))/40 - (9 \cdot \exp(-237/200) \cdot \sin(1343/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2703/2000) \cdot \exp(-477/400))/40 - (9 \cdot \exp(-477/400) \cdot \sin(2703/2000))/8 + 3/8,$   
 $(51 \cdot \cos(34/25) \cdot \exp(-6/5))/40 - (9 \cdot \exp(-6/5) \cdot \sin(34/25))/8 + 3/8,$   
 $(51 \cdot \cos(2737/2000) \cdot \exp(-483/400))/40 - (9 \cdot \exp(-483/400) \cdot \sin(2737/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1377/1000) \cdot \exp(-243/200))/40 - (9 \cdot \exp(-243/200) \cdot \sin(1377/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2771/2000) \cdot \exp(-489/400))/40 - (9 \cdot \exp(-489/400) \cdot \sin(2771/2000))/8 + 3/8,$   
 $(51 \cdot \cos(697/500) \cdot \exp(-123/100))/40 - (9 \cdot \exp(-123/100) \cdot \sin(697/500))/8 + 3/8,$   
 $(51 \cdot \cos(561/400) \cdot \exp(-99/80))/40 - (9 \cdot \exp(-99/80) \cdot \sin(561/400))/8 + 3/8,$   
 $(51 \cdot \cos(1411/1000) \cdot \exp(-249/200))/40 - (9 \cdot \exp(-249/200) \cdot \sin(1411/1000))/8 + 3/8,$   
 $(51 \cdot \cos(2839/2000) \cdot \exp(-501/400))/40 - (9 \cdot \exp(-501/400) \cdot \sin(2839/2000))/8 + 3/8,$   
 $(51 \cdot \cos(357/250) \cdot \exp(-63/50))/40 - (9 \cdot \exp(-63/50) \cdot \sin(357/250))/8 + 3/8,$   
 $(51 \cdot \cos(2873/2000) \cdot \exp(-507/400))/40 - (9 \cdot \exp(-507/400) \cdot \sin(2873/2000))/8 + 3/8,$   
 $(51 \cdot \cos(289/200) \cdot \exp(-51/40))/40 - (9 \cdot \exp(-51/40) \cdot \sin(289/200))/8 + 3/8,$   
 $(51 \cdot \cos(2907/2000) \cdot \exp(-513/400))/40 - (9 \cdot \exp(-513/400) \cdot \sin(2907/2000))/8 + 3/8,$   
 $(51 \cdot \cos(731/500) \cdot \exp(-129/100))/40 - (9 \cdot \exp(-129/100) \cdot \sin(731/500))/8 + 3/8,$   
 $(51 \cdot \cos(2941/2000) \cdot \exp(-519/400))/40 - (9 \cdot \exp(-519/400) \cdot \sin(2941/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1479/1000) \cdot \exp(-261/200))/40 - (9 \cdot \exp(-261/200) \cdot \sin(1479/1000))/8 + 3/8,$   
 $(51 \cdot \cos(119/80) \cdot \exp(-21/16))/40 - (9 \cdot \exp(-21/16) \cdot \sin(119/80))/8 + 3/8,$   
 $(51 \cdot \cos(187/125) \cdot \exp(-33/25))/40 - (9 \cdot \exp(-33/25) \cdot \sin(187/125))/8 + 3/8,$   
 $(51 \cdot \cos(3009/2000) \cdot \exp(-531/400))/40 - (9 \cdot \exp(-531/400) \cdot \sin(3009/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1513/1000) \cdot \exp(-267/200))/40 - (9 \cdot \exp(-267/200) \cdot \sin(1513/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3043/2000) \cdot \exp(-537/400))/40 - (9 \cdot \exp(-537/400) \cdot \sin(3043/2000))/8 + 3/8,$   
 $(51 \cdot \cos(153/100) \cdot \exp(-27/20))/40 - (9 \cdot \exp(-27/20) \cdot \sin(153/100))/8 + 3/8,$   
 $(51 \cdot \cos(3077/2000) \cdot \exp(-543/400))/40 - (9 \cdot \exp(-543/400) \cdot \sin(3077/2000))/8 + 3/8,$



$(51 \cdot \cos(1547/1000) \cdot \exp(-273/200))/40 - (9 \cdot \exp(-273/200) \cdot \sin(1547/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3111/2000) \cdot \exp(-549/400))/40 - (9 \cdot \exp(-549/400) \cdot \sin(3111/2000))/8 + 3/8,$   
 $(51 \cdot \cos(391/250) \cdot \exp(-69/50))/40 - (9 \cdot \exp(-69/50) \cdot \sin(391/250))/8 + 3/8,$   
 $(51 \cdot \cos(629/400) \cdot \exp(-111/80))/40 - (9 \cdot \exp(-111/80) \cdot \sin(629/400))/8 + 3/8,$   
 $(51 \cdot \cos(1581/1000) \cdot \exp(-279/200))/40 - (9 \cdot \exp(-279/200) \cdot \sin(1581/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3179/2000) \cdot \exp(-561/400))/40 - (9 \cdot \exp(-561/400) \cdot \sin(3179/2000))/8 + 3/8,$   
 $(51 \cdot \cos(799/500) \cdot \exp(-141/100))/40 - (9 \cdot \exp(-141/100) \cdot \sin(799/500))/8 + 3/8,$   
 $(51 \cdot \cos(3213/2000) \cdot \exp(-567/400))/40 - (9 \cdot \exp(-567/400) \cdot \sin(3213/2000))/8 + 3/8,$   
 $(51 \cdot \cos(323/200) \cdot \exp(-57/40))/40 - (9 \cdot \exp(-57/40) \cdot \sin(323/200))/8 + 3/8,$   
 $(51 \cdot \cos(3247/2000) \cdot \exp(-573/400))/40 - (9 \cdot \exp(-573/400) \cdot \sin(3247/2000))/8 + 3/8,$   
 $(51 \cdot \cos(204/125) \cdot \exp(-36/25))/40 - (9 \cdot \exp(-36/25) \cdot \sin(204/125))/8 + 3/8,$   
 $(51 \cdot \cos(3281/2000) \cdot \exp(-579/400))/40 - (9 \cdot \exp(-579/400) \cdot \sin(3281/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1649/1000) \cdot \exp(-291/200))/40 - (9 \cdot \exp(-291/200) \cdot \sin(1649/1000))/8 + 3/8,$   
 $(51 \cdot \cos(663/400) \cdot \exp(-117/80))/40 - (9 \cdot \exp(-117/80) \cdot \sin(663/400))/8 + 3/8,$   
 $(51 \cdot \cos(833/500) \cdot \exp(-147/100))/40 - (9 \cdot \exp(-147/100) \cdot \sin(833/500))/8 + 3/8,$   
 $(51 \cdot \cos(3349/2000) \cdot \exp(-591/400))/40 - (9 \cdot \exp(-591/400) \cdot \sin(3349/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1683/1000) \cdot \exp(-297/200))/40 - (9 \cdot \exp(-297/200) \cdot \sin(1683/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3383/2000) \cdot \exp(-597/400))/40 - (9 \cdot \exp(-597/400) \cdot \sin(3383/2000))/8 + 3/8,$   
 $(51 \cdot \cos(17/10) \cdot \exp(-3/2))/40 - (9 \cdot \exp(-3/2) \cdot \sin(17/10))/8 + 3/8,$   
 $(51 \cdot \cos(3417/2000) \cdot \exp(-603/400))/40 - (9 \cdot \exp(-603/400) \cdot \sin(3417/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1717/1000) \cdot \exp(-303/200))/40 - (9 \cdot \exp(-303/200) \cdot \sin(1717/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3451/2000) \cdot \exp(-609/400))/40 - (9 \cdot \exp(-609/400) \cdot \sin(3451/2000))/8 + 3/8,$   
 $(51 \cdot \cos(867/500) \cdot \exp(-153/100))/40 - (9 \cdot \exp(-153/100) \cdot \sin(867/500))/8 + 3/8,$   
 $(51 \cdot \cos(697/400) \cdot \exp(-123/80))/40 - (9 \cdot \exp(-123/80) \cdot \sin(697/400))/8 + 3/8,$   
 $(51 \cdot \cos(1751/1000) \cdot \exp(-309/200))/40 - (9 \cdot \exp(-309/200) \cdot \sin(1751/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3519/2000) \cdot \exp(-621/400))/40 - (9 \cdot \exp(-621/400) \cdot \sin(3519/2000))/8 + 3/8,$   
 $(51 \cdot \cos(221/125) \cdot \exp(-39/25))/40 - (9 \cdot \exp(-39/25) \cdot \sin(221/125))/8 + 3/8,$   
 $(51 \cdot \cos(3553/2000) \cdot \exp(-627/400))/40 - (9 \cdot \exp(-627/400) \cdot \sin(3553/2000))/8 + 3/8,$   
 $(51 \cdot \cos(357/200) \cdot \exp(-63/40))/40 - (9 \cdot \exp(-63/40) \cdot \sin(357/200))/8 + 3/8,$   
 $(51 \cdot \cos(3587/2000) \cdot \exp(-633/400))/40 - (9 \cdot \exp(-633/400) \cdot \sin(3587/2000))/8 + 3/8,$   
 $(51 \cdot \cos(901/500) \cdot \exp(-159/100))/40 - (9 \cdot \exp(-159/100) \cdot \sin(901/500))/8 + 3/8,$   
 $(51 \cdot \cos(3621/2000) \cdot \exp(-639/400))/40 - (9 \cdot \exp(-639/400) \cdot \sin(3621/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1819/1000) \cdot \exp(-321/200))/40 - (9 \cdot \exp(-321/200) \cdot \sin(1819/1000))/8 + 3/8,$   
 $(51 \cdot \cos(731/400) \cdot \exp(-129/80))/40 - (9 \cdot \exp(-129/80) \cdot \sin(731/400))/8 + 3/8,$   
 $(51 \cdot \cos(459/250) \cdot \exp(-81/50))/40 - (9 \cdot \exp(-81/50) \cdot \sin(459/250))/8 + 3/8,$   
 $(51 \cdot \cos(3689/2000) \cdot \exp(-651/400))/40 - (9 \cdot \exp(-651/400) \cdot \sin(3689/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1853/1000) \cdot \exp(-327/200))/40 - (9 \cdot \exp(-327/200) \cdot \sin(1853/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3723/2000) \cdot \exp(-657/400))/40 - (9 \cdot \exp(-657/400) \cdot \sin(3723/2000))/8 + 3/8,$   
 $(51 \cdot \cos(187/100) \cdot \exp(-33/20))/40 - (9 \cdot \exp(-33/20) \cdot \sin(187/100))/8 + 3/8,$   
 $(51 \cdot \cos(3757/2000) \cdot \exp(-663/400))/40 - (9 \cdot \exp(-663/400) \cdot \sin(3757/2000))/8 + 3/8,$   
 $(51 \cdot \cos(1887/1000) \cdot \exp(-333/200))/40 - (9 \cdot \exp(-333/200) \cdot \sin(1887/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3791/2000) \cdot \exp(-669/400))/40 - (9 \cdot \exp(-669/400) \cdot \sin(3791/2000))/8 + 3/8,$   
 $(51 \cdot \cos(238/125) \cdot \exp(-42/25))/40 - (9 \cdot \exp(-42/25) \cdot \sin(238/125))/8 + 3/8,$   
 $(51 \cdot \cos(153/80) \cdot \exp(-27/16))/40 - (9 \cdot \exp(-27/16) \cdot \sin(153/80))/8 + 3/8,$   
 $(51 \cdot \cos(1921/1000) \cdot \exp(-339/200))/40 - (9 \cdot \exp(-339/200) \cdot \sin(1921/1000))/8 + 3/8,$   
 $(51 \cdot \cos(3859/2000) \cdot \exp(-681/400))/40 - (9 \cdot \exp(-681/400) \cdot \sin(3859/2000))/8 + 3/8,$   
 $(51 \cdot \cos(969/500) \cdot \exp(-171/100))/40 - (9 \cdot \exp(-171/100) \cdot \sin(969/500))/8 + 3/8,$   
 $(51 \cdot \cos(3893/2000) \cdot \exp(-687/400))/40 - (9 \cdot \exp(-687/400) \cdot \sin(3893/2000))/8 + 3/8,$   
 $(51 \cdot \cos(391/200) \cdot \exp(-69/40))/40 - (9 \cdot \exp(-69/40) \cdot \sin(391/200))/8 + 3/8,$   
 $(51 \cdot \cos(3927/2000) \cdot \exp(-693/400))/40 - (9 \cdot \exp(-693/400) \cdot \sin(3927/2000))/8 + 3/8,$   
 $(51 \cdot \cos(493/250) \cdot \exp(-87/50))/40 - (9 \cdot \exp(-87/50) \cdot \sin(493/250))/8 + 3/8,$

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

ku =

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

de =

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

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

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

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 - (6\*exp(-63/50)\*sin(357/250))/25, - (153\*cos(2873/2000)\*exp(-507/400))/80 - (6\*exp(-507/400)\*sin(2873/2000))/25, - (153\*cos(289/200)\*exp(-51/40))/80 - (6\*exp(-51/40)\*sin(289/200))/25, - (153\*cos(2907/2000)\*exp(-513/400))/80 - (6\*exp(-513/400)\*sin(2907/2000))/25, - (153\*cos(731/500)\*exp(-129/100))/80 - (6\*exp(-129/100)\*sin(731/500))/25, - (153\*cos(2941/2000)\*exp(-519/400))/80 - (6\*exp(-519/400)\*sin(2941/2000))/25, - (153\*cos(1479/1000)\*exp(-261/200))/80 - (6\*exp(-261/200)\*sin(1479/1000))/25, - (153\*cos(119/80)\*exp(-21/16))/80 - (6\*exp(-21/16)\*sin(119/80))/25, - (153\*cos(187/125)\*exp(-33/25))/80 - (6\*exp(-33/25)\*sin(187/125))/25, - (153\*cos(3009/2000)\*exp(-531/400))/80 - (6\*exp(-531/400)\*sin(3009/2000))/25, - (153\*cos(1513/1000)\*exp(-267/200))/80 - (6\*exp(-267/200)\*sin(1513/1000))/25, - (153\*cos(3043/2000)\*exp(-537/400))/80 - (6\*exp(-537/400)\*sin(3043/2000))/25, - (153\*cos(153/100)\*exp(-27/20))/80 - (6\*exp(-27/20)\*sin(153/100))/25, - (153\*cos(3077/2000)\*exp(-543/400))/80 - (6\*exp(-543/400)\*sin(3077/2000))/25, - (153\*cos(1547/1000)\*exp(-273/200))/80 - (6\*exp(-273/200)\*sin(1547/1000))/25, - (153\*cos(3111/2000)\*exp(-549/400))/80 - (6\*exp(-549/400)\*sin(3111/2000))/25, - (153\*cos(391/250)\*exp(-69/50))/80 - (6\*exp(-69/50)\*sin(391/250))/25, - (153\*cos(629/400)\*exp(-111/80))/80 - (6\*exp(-111/80)\*sin(629/400))/25, - (153\*cos(1581/1000)\*exp(-279/200))/80 - (6\*exp(-279/200)\*sin(1581/1000))/25, - (153\*cos(3179/2000)\*exp(-561/400))/80 - (6\*exp(-561/400)\*sin(3179/2000))/25, - (153\*cos(799/500)\*exp(-141/100))/80 - (6\*exp(-141/100)\*sin(799/500))/25, - (153\*cos(3213/2000)\*exp(-567/400))/80 - (6\*exp(-567/400)\*sin(3213/2000))/25, - (153\*cos(323/200)\*exp(-57/40))/80 - (6\*exp(-57/40)\*sin(323/200))/25, - (153\*cos(3247/2000)\*exp(-573/400))/80 - (6\*exp(-573/400)\*sin(3247/2000))/25, - (153\*cos(204/125)\*exp(-36/25))/80 - (6\*exp(-36/25)\*sin(204/125))/25, - (153\*cos(3281/2000)\*exp(-579/400))/80 - (6\*exp(-579/400)\*sin(3281/2000))/25, - (153\*cos(1649/1000)\*exp(-291/200))/80 - (6\*exp(-291/200)\*sin(1649/1000))/25, - (153\*cos(663/400)\*exp(-117/80))/80 - (6\*exp(-117/80)\*sin(663/400))/25, - (153\*cos(833/500)\*exp(-147/100))/80 - (6\*exp(-147/100)\*sin(833/500))/25, - (153\*cos(3349/2000)\*exp(-591/400))/80 - (6\*exp(-591/400)\*sin(3349/2000))/25, - (153\*cos(1683/1000)\*exp(-297/200))/80 - (6\*exp(-297/200)\*sin(1683/1000))/25, - (153\*cos(3383/2000)\*exp(-597/400))/80 - (6\*exp(-597/400)\*sin(3383/2000))/25, - (153\*cos(17/10)\*exp(-3/2))/80 - (6\*exp(-3/2)\*sin(17/10))/25, - (153\*cos(3417/2000)\*exp(-603/400))/80 - (6\*exp(-603/400)\*sin(3417/2000))/25, - (153\*cos(1717/1000)\*exp(-303/200))/80 - (6\*exp(-303/200)\*sin(1717/1000))/25, - (153\*cos(3451/2000)\*exp(-609/400))/80 - (6\*exp(-609/400)\*sin(3451/2000))/25, - (153\*cos(867/500)\*exp(-153/100))/80 - (6\*exp(-153/100)\*sin(867/500))/25, - (153\*cos(697/400)\*exp(-123/80))/80 - (6\*exp(-123/80)\*sin(697/400))/25, - (153\*cos(1751/1000)\*exp(-309/200))/80 - (6\*exp(-309/200)\*sin(1751/1000))/25, - (153\*cos(3519/2000)\*exp(-621/400))/80 - (6\*exp(-621/400)\*sin(3519/2000))/25, - (153\*cos(221/125)\*exp(-39/25))/80 - (6\*exp(-39/25)\*sin(221/125))/25, - (153\*cos(3553/2000)\*exp(-627/400))/80 - (6\*exp(-627/400)\*sin(3553/2000))/25, - (153\*cos(357/200)\*exp(-63/40))/80 - (6\*exp(-63/40)\*sin(357/200))/25, - (153\*cos(3587/2000)\*exp(-633/400))/80 - (6\*exp(-633/400)\*sin(3587/2000))/25, - (153\*cos(901/500)\*exp(-159/100))/80 - (6\*exp(-159/100)\*sin(901/500))/25, - (153\*cos(3621/2000)\*exp(-639/400))/80 - (6\*exp(-639/400)\*sin(3621/2000))/25, - (153\*cos(1819/1000)\*exp(-321/200))/80 - (6\*exp(-321/200)\*sin(1819/1000))/25, - (153\*cos(731/400)\*exp(-129/80))/80 - (6\*exp(-129/80)\*sin(731/400))/25, - (153\*cos(459/250)\*exp(-81/50))/80 - (6\*exp(-81/50)\*sin(459/250))/25, - (153\*cos(3689/2000)\*exp(-651/400))/80 - (6\*exp(-

651/400)\*sin(3689/2000))/25, - (153\*cos(1853/1000)\*exp(-327/200))/80 - (6\*exp(-327/200)\*sin(1853/1000))/25, - (153\*cos(3723/2000)\*exp(-657/400))/80 - (6\*exp(-657/400)\*sin(3723/2000))/25, - (153\*cos(187/100)\*exp(-33/20))/80 - (6\*exp(-33/20)\*sin(187/100))/25, - (153\*cos(3757/2000)\*exp(-663/400))/80 - (6\*exp(-663/400)\*sin(3757/2000))/25, - (153\*cos(1887/1000)\*exp(-333/200))/80 - (6\*exp(-333/200)\*sin(1887/1000))/25, - (153\*cos(3791/2000)\*exp(-669/400))/80 - (6\*exp(-669/400)\*sin(3791/2000))/25, - (153\*cos(238/125)\*exp(-42/25))/80 - (6\*exp(-42/25)\*sin(238/125))/25, - (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]

Question 4c.

1. `commandwindow`
2. `clear`
3. `clc`
4. `syms x`
5. `y=5*power(sin(5*x),5)`
6. `V=(y^2*pi)`
7. `Vintd= int(V,0,pi)`
8. `Vint=double(Vintd)`

Commandwindow

y =

$5\sin(5x)^5$

V =

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

Vintd =

$(1575\pi^2)/256$

Vint =



60.7212

---

*Published with MATLAB® R2017a*