NAME: IBEZIM FAVOUR CHINENYE

DEPT: CHEMICAL ENGINEERING

MATRIC NO: 16/ENG01/010

MATHS TEST

(a)

```
commandwindow

clear

clc
format long g
C = [0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]
D = [-4; 2; 6; 4];
deborah = inv(C)
X = deborah* D
C =

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

folake =

        -0.178571428571429       -0.102040816326531
0.571428571428571        0.0153061224489796


        0.0357142857142857       -0.0153061224489796
0.0357142857142857       -0.0102040816326531


         0.142857142857143          0.11734693877551
0.392857142857143      -0.00510204081632653


       -0.0357142857142857         0.158163265306122
0.964285714285714       -0.0612244897959184

X =

                         4
     -9.71445146547012e-17
                         2
                         6

>>
```

(b)

```
 commandwindow
clear
clc
close all
syms t
d = 1.5*exp(-0.75*t)*sin(0.85*t)+0.375*t
tn = [0:0.01:2.5]
dn = subs(d,tn)
V = diff(d)
Vn = subs(V,tn)
figure(1)
plot(tn,Vn)
xlabel('time(min)')
ylabel('velocity(km/min)')
axis tight
grid on
grid minor
A = diff(V)
An = subs(A,tn)
figure(2)
plot(tn,An)
xlabel('time(min)')
ylabel('acceleration(km/min^-2)')
axis tight
grid on
grid minor
figure(3)
plot(tn,Vn,tn,An)
axis tight
grid on
grid minor
xlabel('time(min)')
ylabel('variable')
legend('velocity(km(min)','acceleration(km/min^-2)'),'location','best'

d =

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


tn =

  Columns 1 through 5

                         0                    0.01
0.02                  0.03                    0.04

  Columns 6 through 10

                    0.05                    0.06
0.07                  0.08                    0.09

  Columns 11 through 15
```

```
                    0.1                    0.11
0.12                   0.13                   0.14

  Columns 16 through 20

                   0.15                    0.16
0.17                   0.18                   0.19

  Columns 21 through 25

                    0.2                    0.21
0.22                   0.23                   0.24

  Columns 26 through 30

                   0.25                    0.26
0.27                   0.28                   0.29

  Columns 31 through 35

                    0.3                    0.31
0.32                   0.33                   0.34

  Columns 36 through 40

                   0.35                    0.36
0.37                   0.38                   0.39

  Columns 41 through 45

                    0.4                    0.41
0.42                   0.43                   0.44

  Columns 46 through 50

                   0.45                    0.46
0.47                   0.48                   0.49

  Columns 51 through 55

                    0.5                    0.51
0.52                   0.53                   0.54

  Columns 56 through 60

                   0.55                    0.56
0.57                   0.58                   0.59

  Columns 61 through 65
```

```
                    0.6                    0.61
0.62                   0.63                   0.64

  Columns 66 through 70

                   0.65                    0.66
0.67                   0.68                   0.69

  Columns 71 through 75

                    0.7                    0.71
0.72                   0.73                   0.74

  Columns 76 through 80

                   0.75                    0.76
0.77                   0.78                   0.79

  Columns 81 through 85

                    0.8                    0.81
0.82                   0.83                   0.84

  Columns 86 through 90

                   0.85                    0.86
0.87                   0.88                   0.89

  Columns 91 through 95

                    0.9                    0.91
0.92                   0.93                   0.94

  Columns 96 through 100

                   0.95                    0.96
0.97                   0.98                   0.99

  Columns 101 through 105

                      1                    1.01
1.02                   1.03                   1.04

  Columns 106 through 110

                   1.05                    1.06
1.07                   1.08                   1.09

  Columns 111 through 115
```

```
                    1.1                    1.11
1.12                   1.13                   1.14

  Columns 116 through 120

                   1.15                    1.16
1.17                   1.18                   1.19

  Columns 121 through 125

                    1.2                    1.21
1.22                   1.23                   1.24

  Columns 126 through 130

                   1.25                    1.26
1.27                   1.28                   1.29

  Columns 131 through 135

                    1.3                    1.31
1.32                   1.33                   1.34

  Columns 136 through 140

                   1.35                    1.36
1.37                   1.38                   1.39

  Columns 141 through 145

                    1.4                    1.41
1.42                   1.43                   1.44

  Columns 146 through 150

                   1.45                    1.46
1.47                   1.48                   1.49

  Columns 151 through 155

                    1.5                    1.51
1.52                   1.53                   1.54

  Columns 156 through 160

                   1.55                    1.56
1.57                   1.58                   1.59

  Columns 161 through 165
```

```
                    1.6                    1.61
1.62                   1.63                   1.64

  Columns 166 through 170

                   1.65                    1.66
1.67                   1.68                   1.69

  Columns 171 through 175

                    1.7                    1.71
1.72                   1.73                   1.74

  Columns 176 through 180

                   1.75                    1.76
1.77                   1.78                   1.79

  Columns 181 through 185

                    1.8                    1.81
1.82                   1.83                   1.84

  Columns 186 through 190

                   1.85                    1.86
1.87                   1.88                   1.89

  Columns 191 through 195

                    1.9                    1.91
1.92                   1.93                   1.94

  Columns 196 through 200

                   1.95                    1.96
1.97                   1.98                   1.99

  Columns 201 through 205

                      2                    2.01
2.02                   2.03                   2.04

  Columns 206 through 210

                   2.05                    2.06
2.07                   2.08                   2.09

  Columns 211 through 215
```

```
                     2.1                     2.11
2.12                    2.13                    2.14

  Columns 216 through 220

                    2.15                     2.16
2.17                    2.18                    2.19

  Columns 221 through 225

                     2.2                     2.21
2.22                    2.23                    2.24

  Columns 226 through 230

                    2.25                     2.26
2.27                    2.28                    2.29

  Columns 231 through 235

                     2.3                     2.31
2.32                    2.33                    2.34

  Columns 236 through 240

                    2.35                     2.36
2.37                    2.38                    2.39

  Columns 241 through 245

                     2.4                     2.41
2.42                    2.43                    2.44

  Columns 246 through 250

                    2.45                     2.46
2.47                    2.48                    2.49

  Column 251

                     2.5


dn =

[ 0, (3*exp(-3/400)*sin(17/2000))/2 + 3/800, (3*exp(-
3/200)*sin(17/1000))/2 + 3/400, (3*exp(-9/400)*sin(51/2000))/2
+ 9/800, (3*exp(-3/100)*sin(17/500))/2 + 3/200, (3*exp(-
3/80)*sin(17/400))/2 + 3/160, (3*exp(-9/200)*sin(51/1000))/2 +
9/400, (3*exp(-21/400)*sin(119/2000))/2 + 21/800, (3*exp(-
3/50)*sin(17/250))/2 + 3/100, (3*exp(-27/400)*sin(153/2000))/2
```

```
+ 27/800, (3*exp(-3/40)*sin(17/200))/2 + 3/80, (3*exp(-
33/400)*sin(187/2000))/2 + 33/800, (3*exp(-
9/100)*sin(51/500))/2 + 9/200, (3*exp(-
39/400)*sin(221/2000))/2 + 39/800, (3*exp(-
21/200)*sin(119/1000))/2 + 21/400, (3*exp(-
9/80)*sin(51/400))/2 + 9/160, (3*exp(-3/25)*sin(17/125))/2 +
3/50, (3*exp(-51/400)*sin(289/2000))/2 + 51/800, (3*exp(-
27/200)*sin(153/1000))/2 + 27/400, (3*exp(-
57/400)*sin(323/2000))/2 + 57/800, (3*exp(-
3/20)*sin(17/100))/2 + 3/40, (3*exp(-63/400)*sin(357/2000))/2
+ 63/800, (3*exp(-33/200)*sin(187/1000))/2 + 33/400, (3*exp(-
69/400)*sin(391/2000))/2 + 69/800, (3*exp(-
9/50)*sin(51/250))/2 + 9/100, (3*exp(-3/16)*sin(17/80))/2 +
3/32, (3*exp(-39/200)*sin(221/1000))/2 + 39/400, (3*exp(-
81/400)*sin(459/2000))/2 + 81/800, (3*exp(-
21/100)*sin(119/500))/2 + 21/200, (3*exp(-
87/400)*sin(493/2000))/2 + 87/800, (3*exp(-
9/40)*sin(51/200))/2 + 9/80, (3*exp(-93/400)*sin(527/2000))/2
+ 93/800, (3*exp(-6/25)*sin(34/125))/2 + 3/25, (3*exp(-
99/400)*sin(561/2000))/2 + 99/800, (3*exp(-
51/200)*sin(289/1000))/2 + 51/400, (3*exp(-
21/80)*sin(119/400))/2 + 21/160, (3*exp(-
27/100)*sin(153/500))/2 + 27/200, (3*exp(-
111/400)*sin(629/2000))/2 + 111/800, (3*exp(-
57/200)*sin(323/1000))/2 + 57/400, (3*exp(-
117/400)*sin(663/2000))/2 + 117/800, (3*exp(-
3/10)*sin(17/50))/2 + 3/20, (3*exp(-123/400)*sin(697/2000))/2
+ 123/800, (3*exp(-63/200)*sin(357/1000))/2 + 63/400, (3*exp(-
129/400)*sin(731/2000))/2 + 129/800, (3*exp(-
33/100)*sin(187/500))/2 + 33/200, (3*exp(-
27/80)*sin(153/400))/2 + 27/160, (3*exp(-
69/200)*sin(391/1000))/2 + 69/400, (3*exp(-
141/400)*sin(799/2000))/2 + 141/800, (3*exp(-
9/25)*sin(51/125))/2 + 9/50, (3*exp(-147/400)*sin(833/2000))/2
+ 147/800, (3*exp(-3/8)*sin(17/40))/2 + 3/16, (3*exp(-
153/400)*sin(867/2000))/2 + 153/800, (3*exp(-
39/100)*sin(221/500))/2 + 39/200, (3*exp(-
159/400)*sin(901/2000))/2 + 159/800, (3*exp(-
81/200)*sin(459/1000))/2 + 81/400, (3*exp(-
33/80)*sin(187/400))/2 + 33/160, (3*exp(-
21/50)*sin(119/250))/2 + 21/100, (3*exp(-
171/400)*sin(969/2000))/2 + 171/800, (3*exp(-
87/200)*sin(493/1000))/2 + 87/400, (3*exp(-
177/400)*sin(1003/2000))/2 + 177/800, (3*exp(-
9/20)*sin(51/100))/2 + 9/40, (3*exp(-
183/400)*sin(1037/2000))/2 + 183/800, (3*exp(-
93/200)*sin(527/1000))/2 + 93/400, (3*exp(-
189/400)*sin(1071/2000))/2 + 189/800, (3*exp(-
12/25)*sin(68/125))/2 + 6/25, (3*exp(-39/80)*sin(221/400))/2 +
39/160, (3*exp(-99/200)*sin(561/1000))/2 + 99/400, (3*exp(-
201/400)*sin(1139/2000))/2 + 201/800, (3*exp(-
```

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

(3*exp(-369/400)*sin(2091/2000))/2 + 369/800, (3*exp(-
93/100)*sin(527/500))/2 + 93/200, (3*exp(-15/16)*sin(17/16))/2
+ 15/32, (3*exp(-189/200)*sin(1071/1000))/2 + 189/400,
(3*exp(-381/400)*sin(2159/2000))/2 + 381/800, (3*exp(-
24/25)*sin(136/125))/2 + 12/25, (3*exp(-
387/400)*sin(2193/2000))/2 + 387/800, (3*exp(-
39/40)*sin(221/200))/2 + 39/80, (3*exp(-
393/400)*sin(2227/2000))/2 + 393/800, (3*exp(-
99/100)*sin(561/500))/2 + 99/200, (3*exp(-
399/400)*sin(2261/2000))/2 + 399/800, (3*exp(-
201/200)*sin(1139/1000))/2 + 201/400, (3*exp(-
81/80)*sin(459/400))/2 + 81/160, (3*exp(-
51/50)*sin(289/250))/2 + 51/100, (3*exp(-
411/400)*sin(2329/2000))/2 + 411/800, (3*exp(-
207/200)*sin(1173/1000))/2 + 207/400, (3*exp(-
417/400)*sin(2363/2000))/2 + 417/800, (3*exp(-
21/20)*sin(119/100))/2 + 21/40, (3*exp(-
423/400)*sin(2397/2000))/2 + 423/800, (3*exp(-
213/200)*sin(1207/1000))/2 + 213/400, (3*exp(-
429/400)*sin(2431/2000))/2 + 429/800, (3*exp(-
27/25)*sin(153/125))/2 + 27/50, (3*exp(-87/80)*sin(493/400))/2
+ 87/160, (3*exp(-219/200)*sin(1241/1000))/2 + 219/400,
(3*exp(-441/400)*sin(2499/2000))/2 + 441/800, (3*exp(-
111/100)*sin(629/500))/2 + 111/200, (3*exp(-
447/400)*sin(2533/2000))/2 + 447/800, (3*exp(-
9/8)*sin(51/40))/2 + 9/16, (3*exp(-453/400)*sin(2567/2000))/2
+ 453/800, (3*exp(-57/50)*sin(323/250))/2 + 57/100, (3*exp(-
459/400)*sin(2601/2000))/2 + 459/800, (3*exp(-
231/200)*sin(1309/1000))/2 + 231/400, (3*exp(-
93/80)*sin(527/400))/2 + 93/160, (3*exp(-
117/100)*sin(663/500))/2 + 117/200, (3*exp(-
471/400)*sin(2669/2000))/2 + 471/800, (3*exp(-
237/200)*sin(1343/1000))/2 + 237/400, (3*exp(-
477/400)*sin(2703/2000))/2 + 477/800, (3*exp(-
6/5)*sin(34/25))/2 + 3/5, (3*exp(-483/400)*sin(2737/2000))/2 +
483/800, (3*exp(-243/200)*sin(1377/1000))/2 + 243/400,
(3*exp(-489/400)*sin(2771/2000))/2 + 489/800, (3*exp(-
123/100)*sin(697/500))/2 + 123/200, (3*exp(-
99/80)*sin(561/400))/2 + 99/160, (3*exp(-
249/200)*sin(1411/1000))/2 + 249/400, (3*exp(-
501/400)*sin(2839/2000))/2 + 501/800, (3*exp(-
63/50)*sin(357/250))/2 + 63/100, (3*exp(-
507/400)*sin(2873/2000))/2 + 507/800, (3*exp(-
51/40)*sin(289/200))/2 + 51/80, (3*exp(-
513/400)*sin(2907/2000))/2 + 513/800, (3*exp(-
129/100)*sin(731/500))/2 + 129/200, (3*exp(-
519/400)*sin(2941/2000))/2 + 519/800, (3*exp(-
261/200)*sin(1479/1000))/2 + 261/400, (3*exp(-
21/16)*sin(119/80))/2 + 21/32, (3*exp(-33/25)*sin(187/125))/2
+ 33/50, (3*exp(-531/400)*sin(3009/2000))/2 + 531/800,
(3*exp(-267/200)*sin(1513/1000))/2 + 267/400, (3*exp(-

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

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


V =

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


Vn =

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

(51*cos(153/1000)*exp(-27/200))/40 - (9*exp(-
27/200)*sin(153/1000))/8 + 3/8, (51*cos(323/2000)*exp(-
57/400))/40 - (9*exp(-57/400)*sin(323/2000))/8 + 3/8,
(51*cos(17/100)*exp(-3/20))/40 - (9*exp(-3/20)*sin(17/100))/8
+ 3/8, (51*cos(357/2000)*exp(-63/400))/40 - (9*exp(-
63/400)*sin(357/2000))/8 + 3/8, (51*cos(187/1000)*exp(-
33/200))/40 - (9*exp(-33/200)*sin(187/1000))/8 + 3/8,
(51*cos(391/2000)*exp(-69/400))/40 - (9*exp(-
69/400)*sin(391/2000))/8 + 3/8, (51*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*cos(2227/2000)*exp(-
393/400))/40 - (9*exp(-393/400)*sin(2227/2000))/8 + 3/8,
(51*cos(561/500)*exp(-99/100))/40 - (9*exp(-
99/100)*sin(561/500))/8 + 3/8, (51*cos(2261/2000)*exp(-
399/400))/40 - (9*exp(-399/400)*sin(2261/2000))/8 + 3/8,
(51*cos(1139/1000)*exp(-201/200))/40 - (9*exp(-
201/200)*sin(1139/1000))/8 + 3/8, (51*cos(459/400)*exp(-
81/80))/40 - (9*exp(-81/80)*sin(459/400))/8 + 3/8,
(51*cos(289/250)*exp(-51/50))/40 - (9*exp(-
51/50)*sin(289/250))/8 + 3/8, (51*cos(2329/2000)*exp(-
411/400))/40 - (9*exp(-411/400)*sin(2329/2000))/8 + 3/8,
(51*cos(1173/1000)*exp(-207/200))/40 - (9*exp(-
207/200)*sin(1173/1000))/8 + 3/8, (51*cos(2363/2000)*exp(-
417/400))/40 - (9*exp(-417/400)*sin(2363/2000))/8 + 3/8,
(51*cos(119/100)*exp(-21/20))/40 - (9*exp(-
21/20)*sin(119/100))/8 + 3/8, (51*cos(2397/2000)*exp(-
423/400))/40 - (9*exp(-423/400)*sin(2397/2000))/8 + 3/8,
(51*cos(1207/1000)*exp(-213/200))/40 - (9*exp(-
213/200)*sin(1207/1000))/8 + 3/8, (51*cos(2431/2000)*exp(-
429/400))/40 - (9*exp(-429/400)*sin(2431/2000))/8 + 3/8,
(51*cos(153/125)*exp(-27/25))/40 - (9*exp(-
27/25)*sin(153/125))/8 + 3/8, (51*cos(493/400)*exp(-87/80))/40
- (9*exp(-87/80)*sin(493/400))/8 + 3/8,
(51*cos(1241/1000)*exp(-219/200))/40 - (9*exp(-
219/200)*sin(1241/1000))/8 + 3/8, (51*cos(2499/2000)*exp(-
441/400))/40 - (9*exp(-441/400)*sin(2499/2000))/8 + 3/8,
(51*cos(629/500)*exp(-111/100))/40 - (9*exp(-
111/100)*sin(629/500))/8 + 3/8, (51*cos(2533/2000)*exp(-
447/400))/40 - (9*exp(-447/400)*sin(2533/2000))/8 + 3/8,
(51*cos(51/40)*exp(-9/8))/40 - (9*exp(-9/8)*sin(51/40))/8 +
3/8, (51*cos(2567/2000)*exp(-453/400))/40 - (9*exp(-
453/400)*sin(2567/2000))/8 + 3/8, (51*cos(323/250)*exp(-
57/50))/40 - (9*exp(-57/50)*sin(323/250))/8 + 3/8,
(51*cos(2601/2000)*exp(-459/400))/40 - (9*exp(-
459/400)*sin(2601/2000))/8 + 3/8, (51*cos(1309/1000)*exp(-
231/200))/40 - (9*exp(-231/200)*sin(1309/1000))/8 + 3/8,
(51*cos(527/400)*exp(-93/80))/40 - (9*exp(-
93/80)*sin(527/400))/8 + 3/8, (51*cos(663/500)*exp(-
117/100))/40 - (9*exp(-117/100)*sin(663/500))/8 + 3/8,
(51*cos(2669/2000)*exp(-471/400))/40 - (9*exp(-
471/400)*sin(2669/2000))/8 + 3/8, (51*cos(1343/1000)*exp(-

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

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

```
(51*cos(3859/2000)*exp(-681/400))/40 - (9*exp(-
681/400)*sin(3859/2000))/8 + 3/8, (51*cos(969/500)*exp(-
171/100))/40 - (9*exp(-171/100)*sin(969/500))/8 + 3/8,
(51*cos(3893/2000)*exp(-687/400))/40 - (9*exp(-
687/400)*sin(3893/2000))/8 + 3/8, (51*cos(391/200)*exp(-
69/40))/40 - (9*exp(-69/40)*sin(391/200))/8 + 3/8,
(51*cos(3927/2000)*exp(-693/400))/40 - (9*exp(-
693/400)*sin(3927/2000))/8 + 3/8, (51*cos(493/250)*exp(-
87/50))/40 - (9*exp(-87/50)*sin(493/250))/8 + 3/8,
(51*cos(3961/2000)*exp(-699/400))/40 - (9*exp(-
699/400)*sin(3961/2000))/8 + 3/8, (51*cos(1989/1000)*exp(-
351/200))/40 - (9*exp(-351/200)*sin(1989/1000))/8 + 3/8,
(51*cos(799/400)*exp(-141/80))/40 - (9*exp(-
141/80)*sin(799/400))/8 + 3/8, (51*cos(1003/500)*exp(-
177/100))/40 - (9*exp(-177/100)*sin(1003/500))/8 + 3/8,
(51*cos(4029/2000)*exp(-711/400))/40 - (9*exp(-
711/400)*sin(4029/2000))/8 + 3/8, (51*cos(2023/1000)*exp(-
357/200))/40 - (9*exp(-357/200)*sin(2023/1000))/8 + 3/8,
(51*cos(4063/2000)*exp(-717/400))/40 - (9*exp(-
717/400)*sin(4063/2000))/8 + 3/8, (51*cos(51/25)*exp(-9/5))/40
- (9*exp(-9/5)*sin(51/25))/8 + 3/8, (51*cos(4097/2000)*exp(-
723/400))/40 - (9*exp(-723/400)*sin(4097/2000))/8 + 3/8,
(51*cos(2057/1000)*exp(-363/200))/40 - (9*exp(-
363/200)*sin(2057/1000))/8 + 3/8, (51*cos(4131/2000)*exp(-
729/400))/40 - (9*exp(-729/400)*sin(4131/2000))/8 + 3/8,
(51*cos(1037/500)*exp(-183/100))/40 - (9*exp(-
183/100)*sin(1037/500))/8 + 3/8, (51*cos(833/400)*exp(-
147/80))/40 - (9*exp(-147/80)*sin(833/400))/8 + 3/8,
(51*cos(2091/1000)*exp(-369/200))/40 - (9*exp(-
369/200)*sin(2091/1000))/8 + 3/8, (51*cos(4199/2000)*exp(-
741/400))/40 - (9*exp(-741/400)*sin(4199/2000))/8 + 3/8,
(51*cos(527/250)*exp(-93/50))/40 - (9*exp(-
93/50)*sin(527/250))/8 + 3/8, (51*cos(4233/2000)*exp(-
747/400))/40 - (9*exp(-747/400)*sin(4233/2000))/8 + 3/8,
(51*cos(17/8)*exp(-15/8))/40 - (9*exp(-15/8)*sin(17/8))/8 +
3/8]


A =

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


An =

[ -153/80, - (153*cos(17/2000)*exp(-3/400))/80 - (6*exp(-
3/400)*sin(17/2000))/25, - (153*cos(17/1000)*exp(-3/200))/80 -
(6*exp(-3/200)*sin(17/1000))/25, - (153*cos(51/2000)*exp(-
9/400))/80 - (6*exp(-9/400)*sin(51/2000))/25, -
(153*cos(17/500)*exp(-3/100))/80 - (6*exp(-
```

3/100)*sin(17/500))/25, - (153*cos(17/400)*exp(-3/80))/80 -
(6*exp(-3/80)*sin(17/400))/25, - (153*cos(51/1000)*exp(-
9/200))/80 - (6*exp(-9/200)*sin(51/1000))/25, -
(153*cos(119/2000)*exp(-21/400))/80 - (6*exp(-
21/400)*sin(119/2000))/25, - (153*cos(17/250)*exp(-3/50))/80 -
(6*exp(-3/50)*sin(17/250))/25, - (153*cos(153/2000)*exp(-
27/400))/80 - (6*exp(-27/400)*sin(153/2000))/25, -
(153*cos(17/200)*exp(-3/40))/80 - (6*exp(-
3/40)*sin(17/200))/25, - (153*cos(187/2000)*exp(-33/400))/80 -
(6*exp(-33/400)*sin(187/2000))/25, - (153*cos(51/500)*exp(-
9/100))/80 - (6*exp(-9/100)*sin(51/500))/25, -
(153*cos(221/2000)*exp(-39/400))/80 - (6*exp(-
39/400)*sin(221/2000))/25, - (153*cos(119/1000)*exp(-
21/200))/80 - (6*exp(-21/200)*sin(119/1000))/25, -
(153*cos(51/400)*exp(-9/80))/80 - (6*exp(-
9/80)*sin(51/400))/25, - (153*cos(17/125)*exp(-3/25))/80 -
(6*exp(-3/25)*sin(17/125))/25, - (153*cos(289/2000)*exp(-
51/400))/80 - (6*exp(-51/400)*sin(289/2000))/25, -
(153*cos(153/1000)*exp(-27/200))/80 - (6*exp(-
27/200)*sin(153/1000))/25, - (153*cos(323/2000)*exp(-
57/400))/80 - (6*exp(-57/400)*sin(323/2000))/25, -
(153*cos(17/100)*exp(-3/20))/80 - (6*exp(-
3/20)*sin(17/100))/25, - (153*cos(357/2000)*exp(-63/400))/80 -
(6*exp(-63/400)*sin(357/2000))/25, - (153*cos(187/1000)*exp(-
33/200))/80 - (6*exp(-33/200)*sin(187/1000))/25, -
(153*cos(391/2000)*exp(-69/400))/80 - (6*exp(-
69/400)*sin(391/2000))/25, - (153*cos(51/250)*exp(-9/50))/80 -
(6*exp(-9/50)*sin(51/250))/25, - (153*cos(17/80)*exp(-
3/16))/80 - (6*exp(-3/16)*sin(17/80))/25, -
(153*cos(221/1000)*exp(-39/200))/80 - (6*exp(-
39/200)*sin(221/1000))/25, - (153*cos(459/2000)*exp(-
81/400))/80 - (6*exp(-81/400)*sin(459/2000))/25, -
(153*cos(119/500)*exp(-21/100))/80 - (6*exp(-
21/100)*sin(119/500))/25, - (153*cos(493/2000)*exp(-
87/400))/80 - (6*exp(-87/400)*sin(493/2000))/25, -
(153*cos(51/200)*exp(-9/40))/80 - (6*exp(-
9/40)*sin(51/200))/25, - (153*cos(527/2000)*exp(-93/400))/80 -
(6*exp(-93/400)*sin(527/2000))/25, - (153*cos(34/125)*exp(-
6/25))/80 - (6*exp(-6/25)*sin(34/125))/25, -
(153*cos(561/2000)*exp(-99/400))/80 - (6*exp(-
99/400)*sin(561/2000))/25, - (153*cos(289/1000)*exp(-
51/200))/80 - (6*exp(-51/200)*sin(289/1000))/25, -
(153*cos(119/400)*exp(-21/80))/80 - (6*exp(-
21/80)*sin(119/400))/25, - (153*cos(153/500)*exp(-27/100))/80
- (6*exp(-27/100)*sin(153/500))/25, - (153*cos(629/2000)*exp(-
111/400))/80 - (6*exp(-111/400)*sin(629/2000))/25, -
(153*cos(323/1000)*exp(-57/200))/80 - (6*exp(-
57/200)*sin(323/1000))/25, - (153*cos(663/2000)*exp(-
117/400))/80 - (6*exp(-117/400)*sin(663/2000))/25, -
(153*cos(17/50)*exp(-3/10))/80 - (6*exp(-3/10)*sin(17/50))/25,
- (153*cos(697/2000)*exp(-123/400))/80 - (6*exp(-

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

```
231/400))/80 - (6*exp(-231/400)*sin(1309/2000))/25, -
(153*cos(663/1000)*exp(-117/200))/80 - (6*exp(-
117/200)*sin(663/1000))/25, - (153*cos(1343/2000)*exp(-
237/400))/80 - (6*exp(-237/400)*sin(1343/2000))/25, -
(153*cos(17/25)*exp(-3/5))/80 - (6*exp(-3/5)*sin(17/25))/25, -
(153*cos(1377/2000)*exp(-243/400))/80 - (6*exp(-
243/400)*sin(1377/2000))/25, - (153*cos(697/1000)*exp(-
123/200))/80 - (6*exp(-123/200)*sin(697/1000))/25, -
(153*cos(1411/2000)*exp(-249/400))/80 - (6*exp(-
249/400)*sin(1411/2000))/25, - (153*cos(357/500)*exp(-
63/100))/80 - (6*exp(-63/100)*sin(357/500))/25, -
(153*cos(289/400)*exp(-51/80))/80 - (6*exp(-
51/80)*sin(289/400))/25, - (153*cos(731/1000)*exp(-
129/200))/80 - (6*exp(-129/200)*sin(731/1000))/25, -
(153*cos(1479/2000)*exp(-261/400))/80 - (6*exp(-
261/400)*sin(1479/2000))/25, - (153*cos(187/250)*exp(-
33/50))/80 - (6*exp(-33/50)*sin(187/250))/25, -
(153*cos(1513/2000)*exp(-267/400))/80 - (6*exp(-
267/400)*sin(1513/2000))/25, - (153*cos(153/200)*exp(-
27/40))/80 - (6*exp(-27/40)*sin(153/200))/25, -
(153*cos(1547/2000)*exp(-273/400))/80 - (6*exp(-
273/400)*sin(1547/2000))/25, - (153*cos(391/500)*exp(-
69/100))/80 - (6*exp(-69/100)*sin(391/500))/25, -
(153*cos(1581/2000)*exp(-279/400))/80 - (6*exp(-
279/400)*sin(1581/2000))/25, - (153*cos(799/1000)*exp(-
141/200))/80 - (6*exp(-141/200)*sin(799/1000))/25, -
(153*cos(323/400)*exp(-57/80))/80 - (6*exp(-
57/80)*sin(323/400))/25, - (153*cos(102/125)*exp(-18/25))/80 -
(6*exp(-18/25)*sin(102/125))/25, - (153*cos(1649/2000)*exp(-
291/400))/80 - (6*exp(-291/400)*sin(1649/2000))/25, -
(153*cos(833/1000)*exp(-147/200))/80 - (6*exp(-
147/200)*sin(833/1000))/25, - (153*cos(1683/2000)*exp(-
297/400))/80 - (6*exp(-297/400)*sin(1683/2000))/25, -
(153*cos(17/20)*exp(-3/4))/80 - (6*exp(-3/4)*sin(17/20))/25, -
(153*cos(1717/2000)*exp(-303/400))/80 - (6*exp(-
303/400)*sin(1717/2000))/25, - (153*cos(867/1000)*exp(-
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 - (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]
```

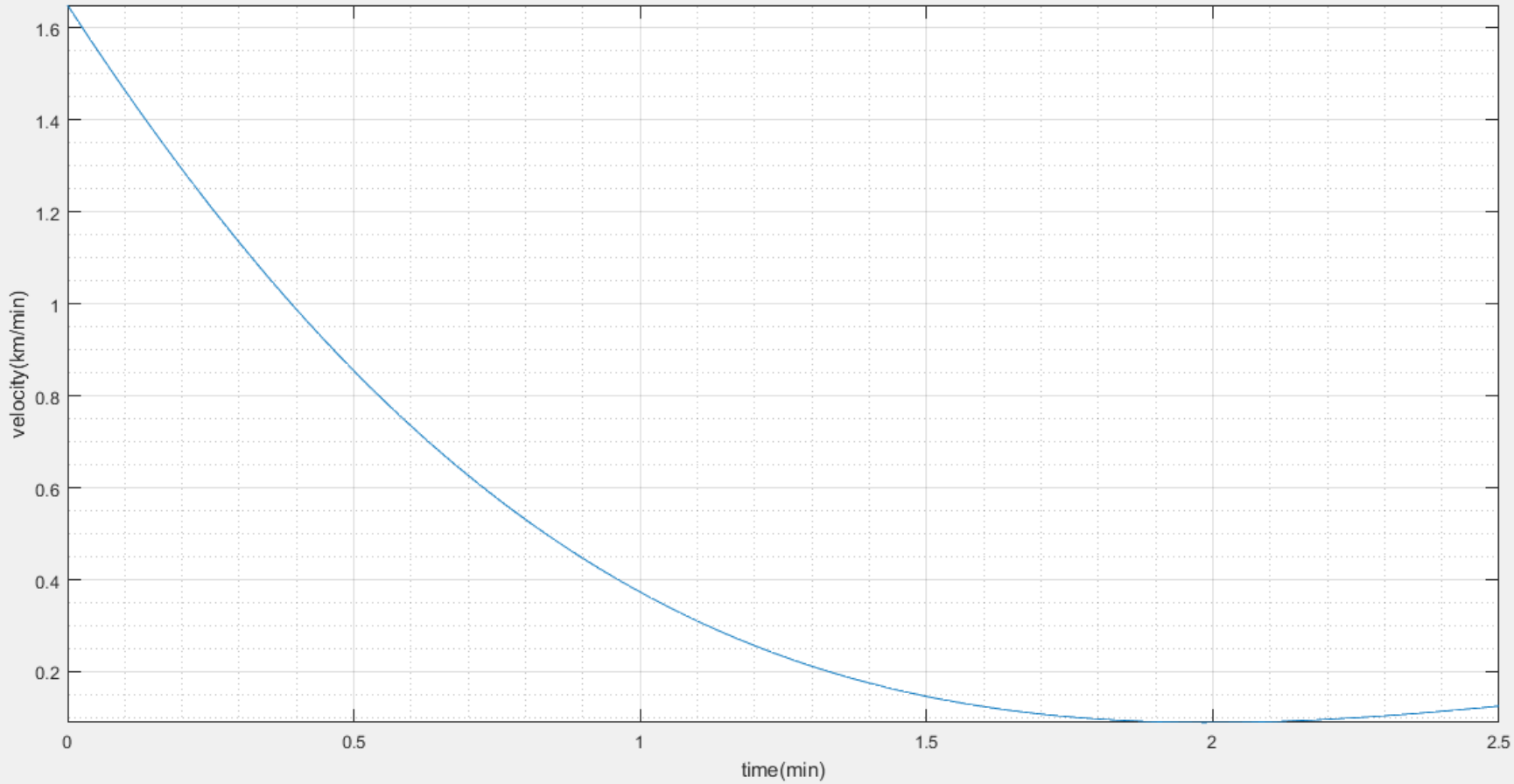
```
ans =

    'location'


ans =

    'best'
```

(C)

```
commandwindow
clear
clc
syms x
y = (5*sin(5*x))^5
V = int(pi*(y^2))
int(5*sin(5*x)^5, 0, pi)
y =

3125*sin(5*x)^5


V =

(390625*pi*(12600*x - 2100*sin(10*x) + 600*sin(20*x) -
150*sin(30*x) + 25*sin(40*x) - 2*sin(50*x)))/2048


ans =

16/15

>>Vintd =

          1.06666666666667
```

Figure 1

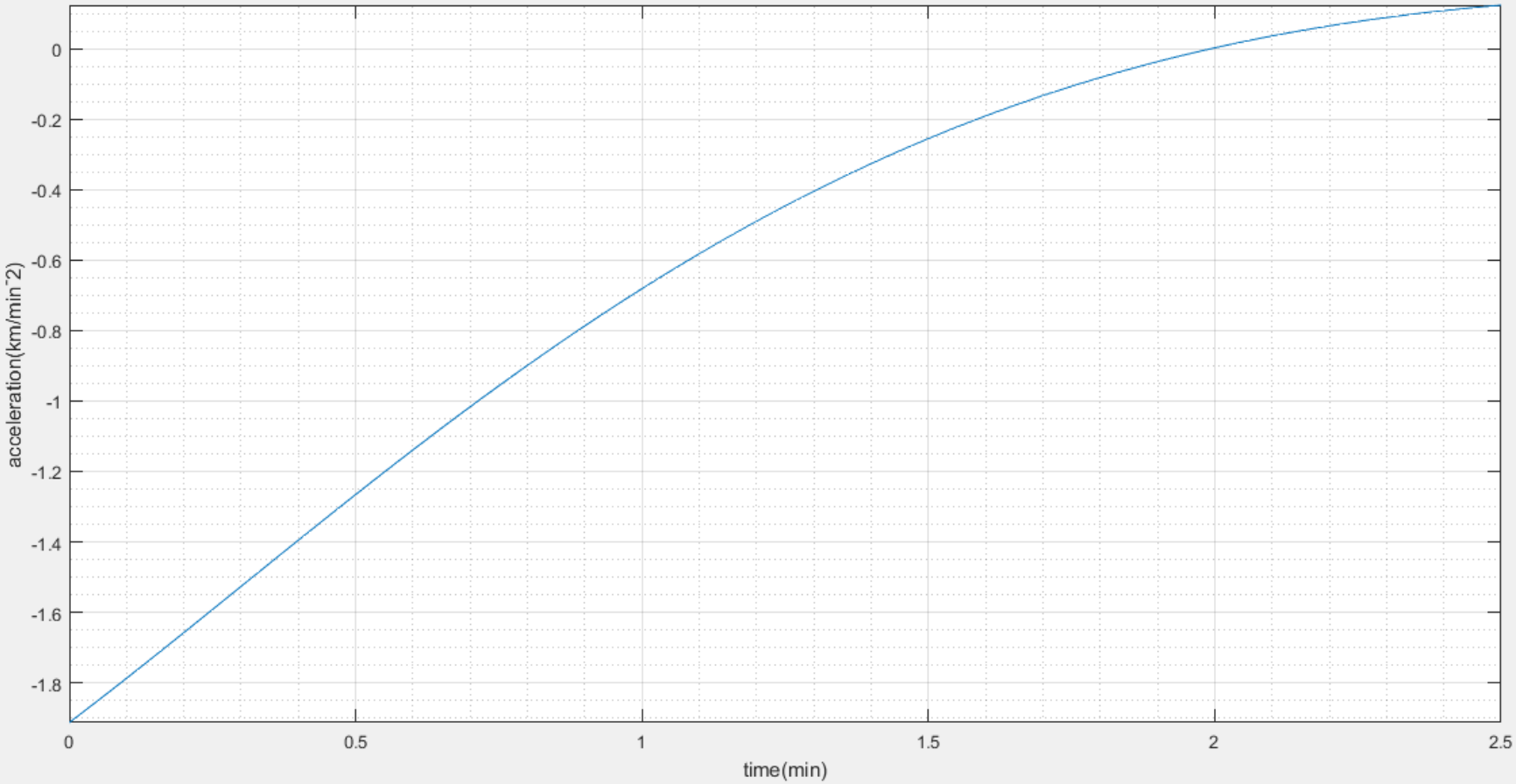
File Edit View Insert Tools Desktop Window Help



19:57
20/11/2017

Figure 2

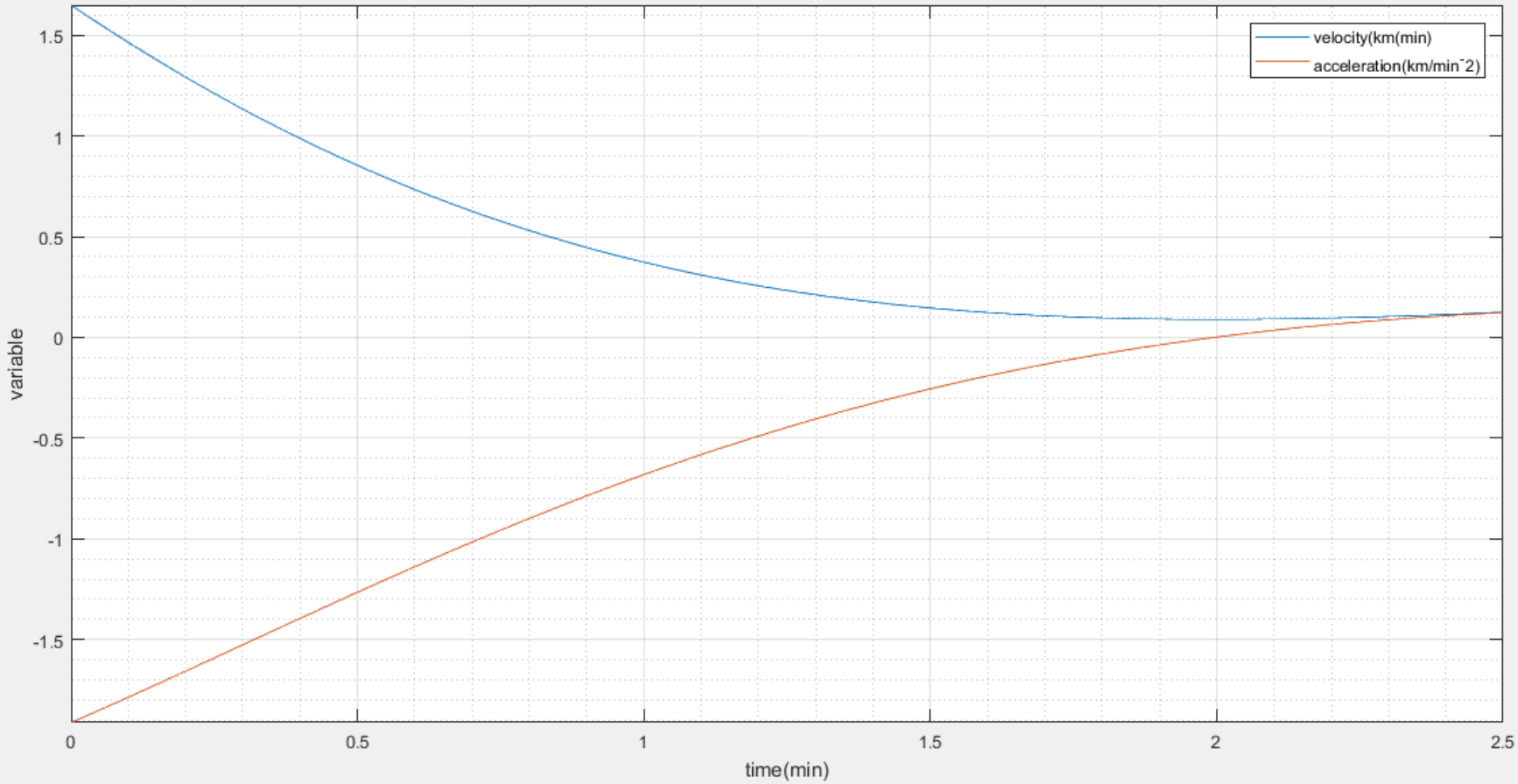
File Edit View Insert Tools Desktop Window Help



19:57
20/11/2017

Figure 3

File Edit View Insert Tools Desktop Window Help



19:57
20/11/2017