

## MID- SEMESTER TEST

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COURSE: ENG 281  
MATRIC NO.: 16/ENG06/021  
DEPARTMENT: MECHANICAL ENGINEERING

### QUESTION 1

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

### OUTPUT:

```
A = 0    10    4    -2
     -3   -17    1    2
      1    1    1    0
      8   -34   16   -10
b = 4
     2
     6
     4
x = -0.1786  -0.1020  0.5714  0.0153
     0.0357  -0.0153  0.0357  -0.0102
     0.1429  0.1173  0.3929  -0.0051
     -0.0357  0.1582  0.9643  -0.0612

T = 2.5714
     0.2857
     3.1429
     5.7143
```

### QUESTION 2

```
commandwindow
clc
clear
syms t
d=1.5*exp(-0.75*t)*sin(0.85*t)+(0.375*t)
tn=(0:0.01:2.5)
v=diff(d)
a=diff(v)
vn=subs(v,tn)
an=subs(a,tn)
figure(1)
plot(tn,vn,tn,an)
grid on
grid minor
axis tight
xlabel('time(sec)')
```

```
ylabel('variable')
legend('velocity(km/min)', 'acceleration(km/min^2)')
```

**OUTPUT:**

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

tn = Columns 1 through 9

0	0.0100	0.0200	0.0300	0.0400	0.0500	0.0600	0.0700	0.0800
Columns 10 through 18								
0.0900	0.1000	0.1100	0.1200	0.1300	0.1400	0.1500	0.1600	0.1700
Columns 19 through 27								
0.1800	0.1900	0.2000	0.2100	0.2200	0.2300	0.2400	0.2500	0.2600
Columns 28 through 36								
0.2700	0.2800	0.2900	0.3000	0.3100	0.3200	0.3300	0.3400	0.3500
Columns 37 through 45								
0.3600	0.3700	0.3800	0.3900	0.4000	0.4100	0.4200	0.4300	0.4400
Columns 46 through 54								
0.4500	0.4600	0.4700	0.4800	0.4900	0.5000	0.5100	0.5200	0.5300
Columns 55 through 63								
0.5400	0.5500	0.5600	0.5700	0.5800	0.5900	0.6000	0.6100	0.6200
Columns 64 through 72								
0.6300	0.6400	0.6500	0.6600	0.6700	0.6800	0.6900	0.7000	0.7100
Columns 73 through 81								
0.7200	0.7300	0.7400	0.7500	0.7600	0.7700	0.7800	0.7900	0.8000
Columns 82 through 90								
0.8100	0.8200	0.8300	0.8400	0.8500	0.8600	0.8700	0.8800	0.8900
Columns 91 through 99								
0.9000	0.9100	0.9200	0.9300	0.9400	0.9500	0.9600	0.9700	0.9800
Columns 100 through 108								
0.9900	1.0000	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700
Columns 109 through 117								
1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600
Columns 118 through 126								
1.1700	1.1800	1.1900	1.2000	1.2100	1.2200	1.2300	1.2400	1.2500
Columns 127 through 135								
1.2600	1.2700	1.2800	1.2900	1.3000	1.3100	1.3200	1.3300	1.3400
Columns 136 through 144								
1.3500	1.3600	1.3700	1.3800	1.3900	1.4000	1.4100	1.4200	1.4300
Columns 145 through 153								
1.4400	1.4500	1.4600	1.4700	1.4800	1.4900	1.5000	1.5100	1.5200
Columns 154 through 162								
1.5300	1.5400	1.5500	1.5600	1.5700	1.5800	1.5900	1.6000	1.6100
Columns 163 through 171								
1.6200	1.6300	1.6400	1.6500	1.6600	1.6700	1.6800	1.6900	1.7000
Columns 172 through 180								
1.7100	1.7200	1.7300	1.7400	1.7500	1.7600	1.7700	1.7800	1.7900
Columns 181 through 189								
1.8000	1.8100	1.8200	1.8300	1.8400	1.8500	1.8600	1.8700	1.8800

Columns 190 through 198

1.8900 1.9000 1.9100 1.9200 1.9300 1.9400 1.9500 1.9600 1.9700

Columns 199 through 207

1.9800 1.9900 2.0000 2.0100 2.0200 2.0300 2.0400 2.0500 2.0600

Columns 208 through 216

2.0700 2.0800 2.0900 2.1000 2.1100 2.1200 2.1300 2.1400 2.1500

Columns 217 through 225

2.1600 2.1700 2.1800 2.1900 2.2000 2.2100 2.2200 2.2300 2.2400

Columns 226 through 234

2.2500 2.2600 2.2700 2.2800 2.2900 2.3000 2.3100 2.3200 2.3300

Columns 235 through 243

2.3400 2.3500 2.3600 2.3700 2.3800 2.3900 2.4000 2.4100 2.4200

Columns 244 through 251

2.4300 2.4400 2.4500 2.4600 2.4700 2.4800 2.4900 2.5000

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

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

$$vn =$$

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

$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,$

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

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



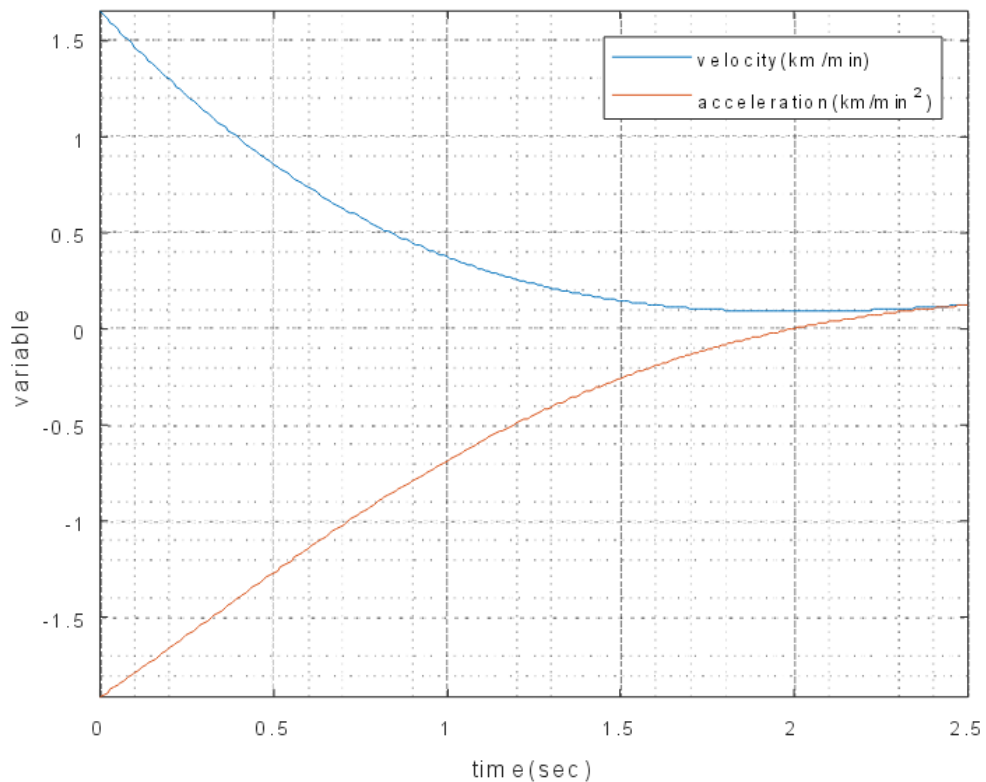
$(153 \cdot \cos(119/500) \cdot \exp(-21/100))/80 - (6 \cdot \exp(-21/100) \cdot \sin(119/500))/25, -$   
 $(153 \cdot \cos(493/2000) \cdot \exp(-87/400))/80 - (6 \cdot \exp(-87/400) \cdot \sin(493/2000))/25, -$   
 $(153 \cdot \cos(51/200) \cdot \exp(-9/40))/80 - (6 \cdot \exp(-9/40) \cdot \sin(51/200))/25,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

$(153 \cdot \cos(663/1000) \cdot \exp(-117/200))/80 - (6 \cdot \exp(-117/200) \cdot \sin(663/1000))/25, -$   
 $(153 \cdot \cos(1343/2000) \cdot \exp(-237/400))/80 - (6 \cdot \exp(-237/400) \cdot \sin(1343/2000))/25, -$   
 $(153 \cdot \cos(17/25) \cdot \exp(-3/5))/80 - (6 \cdot \exp(-3/5) \cdot \sin(17/25))/25, - (153 \cdot \cos(1377/2000) \cdot \exp(-$   
 $243/400))/80 - (6 \cdot \exp(-243/400) \cdot \sin(1377/2000))/25, - (153 \cdot \cos(697/1000) \cdot \exp(-123/200))/80$   
 $- (6 \cdot \exp(-123/200) \cdot \sin(697/1000))/25, - (153 \cdot \cos(1411/2000) \cdot \exp(-249/400))/80 - (6 \cdot \exp(-$   
 $249/400) \cdot \sin(1411/2000))/25, - (153 \cdot \cos(357/500) \cdot \exp(-63/100))/80 - (6 \cdot \exp(-$   
 $63/100) \cdot \sin(357/500))/25, - (153 \cdot \cos(289/400) \cdot \exp(-51/80))/80 - (6 \cdot \exp(-$   
 $51/80) \cdot \sin(289/400))/25, - (153 \cdot \cos(731/1000) \cdot \exp(-129/200))/80 - (6 \cdot \exp(-$   
 $129/200) \cdot \sin(731/1000))/25, - (153 \cdot \cos(1479/2000) \cdot \exp(-261/400))/80 - (6 \cdot \exp(-$   
 $261/400) \cdot \sin(1479/2000))/25, - (153 \cdot \cos(187/250) \cdot \exp(-33/50))/80 - (6 \cdot \exp(-$   
 $33/50) \cdot \sin(187/250))/25, - (153 \cdot \cos(1513/2000) \cdot \exp(-267/400))/80 - (6 \cdot \exp(-$   
 $267/400) \cdot \sin(1513/2000))/25, - (153 \cdot \cos(153/200) \cdot \exp(-27/40))/80 - (6 \cdot \exp(-$   
 $27/40) \cdot \sin(153/200))/25, - (153 \cdot \cos(1547/2000) \cdot \exp(-273/400))/80 - (6 \cdot \exp(-$   
 $273/400) \cdot \sin(1547/2000))/25, - (153 \cdot \cos(391/500) \cdot \exp(-69/100))/80 - (6 \cdot \exp(-$   
 $69/100) \cdot \sin(391/500))/25, - (153 \cdot \cos(1581/2000) \cdot \exp(-279/400))/80 - (6 \cdot \exp(-$   
 $279/400) \cdot \sin(1581/2000))/25, - (153 \cdot \cos(799/1000) \cdot \exp(-141/200))/80 - (6 \cdot \exp(-$   
 $141/200) \cdot \sin(799/1000))/25, - (153 \cdot \cos(323/400) \cdot \exp(-57/80))/80 - (6 \cdot \exp(-$   
 $57/80) \cdot \sin(323/400))/25, - (153 \cdot \cos(102/125) \cdot \exp(-18/25))/80 - (6 \cdot \exp(-$   
 $18/25) \cdot \sin(102/125))/25, - (153 \cdot \cos(1649/2000) \cdot \exp(-291/400))/80 - (6 \cdot \exp(-$   
 $291/400) \cdot \sin(1649/2000))/25, - (153 \cdot \cos(833/1000) \cdot \exp(-147/200))/80 - (6 \cdot \exp(-$   
 $147/200) \cdot \sin(833/1000))/25, - (153 \cdot \cos(1683/2000) \cdot \exp(-297/400))/80 - (6 \cdot \exp(-$   
 $297/400) \cdot \sin(1683/2000))/25, - (153 \cdot \cos(17/20) \cdot \exp(-3/4))/80 - (6 \cdot \exp(-3/4) \cdot \sin(17/20))/25,$   
 $- (153 \cdot \cos(1717/2000) \cdot \exp(-303/400))/80 - (6 \cdot \exp(-303/400) \cdot \sin(1717/2000))/25, -$   
 $(153 \cdot \cos(867/1000) \cdot \exp(-153/200))/80 - (6 \cdot \exp(-153/200) \cdot \sin(867/1000))/25, -$   
 $(153 \cdot \cos(1751/2000) \cdot \exp(-309/400))/80 - (6 \cdot \exp(-309/400) \cdot \sin(1751/2000))/25, -$   
 $(153 \cdot \cos(221/250) \cdot \exp(-39/50))/80 - (6 \cdot \exp(-39/50) \cdot \sin(221/250))/25, -$   
 $(153 \cdot \cos(357/400) \cdot \exp(-63/80))/80 - (6 \cdot \exp(-63/80) \cdot \sin(357/400))/25, -$   
 $(153 \cdot \cos(901/1000) \cdot \exp(-159/200))/80 - (6 \cdot \exp(-159/200) \cdot \sin(901/1000))/25, -$   
 $(153 \cdot \cos(1819/2000) \cdot \exp(-321/400))/80 - (6 \cdot \exp(-321/400) \cdot \sin(1819/2000))/25, -$   
 $(153 \cdot \cos(459/500) \cdot \exp(-81/100))/80 - (6 \cdot \exp(-81/100) \cdot \sin(459/500))/25, -$   
 $(153 \cdot \cos(1853/2000) \cdot \exp(-327/400))/80 - (6 \cdot \exp(-327/400) \cdot \sin(1853/2000))/25, -$   
 $(153 \cdot \cos(187/200) \cdot \exp(-33/40))/80 - (6 \cdot \exp(-33/40) \cdot \sin(187/200))/25, -$   
 $(153 \cdot \cos(1887/2000) \cdot \exp(-333/400))/80 - (6 \cdot \exp(-333/400) \cdot \sin(1887/2000))/25, -$   
 $(153 \cdot \cos(119/125) \cdot \exp(-21/25))/80 - (6 \cdot \exp(-21/25) \cdot \sin(119/125))/25, -$   
 $(153 \cdot \cos(1921/2000) \cdot \exp(-339/400))/80 - (6 \cdot \exp(-339/400) \cdot \sin(1921/2000))/25, -$   
 $(153 \cdot \cos(969/1000) \cdot \exp(-171/200))/80 - (6 \cdot \exp(-171/200) \cdot \sin(969/1000))/25, -$   
 $(153 \cdot \cos(391/400) \cdot \exp(-69/80))/80 - (6 \cdot \exp(-69/80) \cdot \sin(391/400))/25, -$   
 $(153 \cdot \cos(493/500) \cdot \exp(-87/100))/80 - (6 \cdot \exp(-87/100) \cdot \sin(493/500))/25, -$   
 $(153 \cdot \cos(1989/2000) \cdot \exp(-351/400))/80 - (6 \cdot \exp(-351/400) \cdot \sin(1989/2000))/25, -$   
 $(153 \cdot \cos(1003/1000) \cdot \exp(-177/200))/80 - (6 \cdot \exp(-177/200) \cdot \sin(1003/1000))/25, -$   
 $(153 \cdot \cos(2023/2000) \cdot \exp(-357/400))/80 - (6 \cdot \exp(-357/400) \cdot \sin(2023/2000))/25, -$   
 $(153 \cdot \cos(51/50) \cdot \exp(-9/10))/80 - (6 \cdot \exp(-9/10) \cdot \sin(51/50))/25, - (153 \cdot \cos(2057/2000) \cdot \exp(-$   
 $363/400))/80 - (6 \cdot \exp(-363/400) \cdot \sin(2057/2000))/25, - (153 \cdot \cos(1037/1000) \cdot \exp(-$   
 $183/200))/80 - (6 \cdot \exp(-183/200) \cdot \sin(1037/1000))/25, - (153 \cdot \cos(2091/2000) \cdot \exp(-$   
 $369/400))/80 - (6 \cdot \exp(-369/400) \cdot \sin(2091/2000))/25, - (153 \cdot \cos(527/500) \cdot \exp(-93/100))/80 -$   
 $(6 \cdot \exp(-93/100) \cdot \sin(527/500))/25, - (153 \cdot \cos(17/16) \cdot \exp(-15/16))/80 - (6 \cdot \exp(-$   
 $15/16) \cdot \sin(17/16))/25, - (153 \cdot \cos(1071/1000) \cdot \exp(-189/200))/80 - (6 \cdot \exp(-$   
 $189/200) \cdot \sin(1071/1000))/25, - (153 \cdot \cos(2159/2000) \cdot \exp(-381/400))/80 - (6 \cdot \exp(-$

$381/400) * \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, -$

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



### QUESTION 3

```

commandwindow
clc
clear
syms x
y= 5*(sin(5*x))^5
xn=(0)
xnn=(pi)
a=y^2
v=pi*int(a)
g=subs(v,xn)
h=subs(v,xnn)
c=(h-g)

```

### OUTPUT:

```

y = 5*sin(5*x)^5
xn = 0
xnn = 3.1416
a = 25*sin(5*x)^10
v = pi*((1575*x)/256 - (525*sin(10*x))/512 + (75*sin(20*x))/256 - (75*sin(30*x))/1024 +
(25*sin(40*x))/2048 - sin(50*x)/1024)
g = 0
h = (1575*pi^2)/256
c = (1575*pi^2)/256

```

