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16/eng06/007
Mechanical Engineering

1.Editor

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

A =

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

B =

```
-4  
2  
6  
4
```

ans =

```
-0.1786 -0.1020 0.5714 0.0153  
0.0357 -0.0153 0.0357 -0.0102  
0.1429 0.1173 0.3929 -0.0051  
-0.0357 0.1582 0.9643 -0.0612
```

X =

```
4.0000  
-0.0000  
2.0000  
6.0000
```

2. editor

```
commandwindow
```

```

clear
clc
close all
syms t
d=1.5*exp(-0.75*t)*sin(0.85*t)+0.3375*t
tn=(0:0.01:2.5)
dn=subs(d,tn)
v=diff(d)
vn=subs(v,tn)
a=diff(v)
an=subs(a,tn)
plot(tn,vn,tn,an)
xlabel('Time(minutes)')
ylabel('Variable')
legend('Velocity(Km/minutes)', 'Acceleration(Km/minutes^2)', 'location', 'Best')
grid on
grid minor

```

command window

d =

$$(27*t)/80 + (3*\sin((17*t)/20)*\exp(-(3*t)/4))/2$$

tn =

Columns 1 through 10

0 0.0100 0.0200 0.0300 0.0400 0.0500 0.0600 0.0700 0.0800 0.0900

Columns 11 through 20

0.1000 0.1100 0.1200 0.1300 0.1400 0.1500 0.1600 0.1700 0.1800 0.1900

Columns 21 through 30

0.2000 0.2100 0.2200 0.2300 0.2400 0.2500 0.2600 0.2700 0.2800 0.2900

Columns 31 through 40

0.3000 0.3100 0.3200 0.3300 0.3400 0.3500 0.3600 0.3700 0.3800 0.3900

Columns 41 through 50

0.4000 0.4100 0.4200 0.4300 0.4400 0.4500 0.4600 0.4700 0.4800 0.4900

Columns 51 through 60

0.5000 0.5100 0.5200 0.5300 0.5400 0.5500 0.5600 0.5700 0.5800 0.5900

Columns 61 through 70

0.6000 0.6100 0.6200 0.6300 0.6400 0.6500 0.6600 0.6700 0.6800 0.6900

Columns 71 through 80

0.7000 0.7100 0.7200 0.7300 0.7400 0.7500 0.7600 0.7700 0.7800 0.7900

Columns 81 through 90

0.8000 0.8100 0.8200 0.8300 0.8400 0.8500 0.8600 0.8700 0.8800 0.8900

Columns 91 through 100

0.9000 0.9100 0.9200 0.9300 0.9400 0.9500 0.9600 0.9700 0.9800 0.9900

Columns 101 through 110

1.0000 1.0100 1.0200 1.0300 1.0400 1.0500 1.0600 1.0700 1.0800 1.0900

Columns 111 through 120

1.1000 1.1100 1.1200 1.1300 1.1400 1.1500 1.1600 1.1700 1.1800 1.1900

Columns 121 through 130

1.2000 1.2100 1.2200 1.2300 1.2400 1.2500 1.2600 1.2700 1.2800 1.2900

Columns 131 through 140

1.3000 1.3100 1.3200 1.3300 1.3400 1.3500 1.3600 1.3700 1.3800 1.3900

Columns 141 through 150

1.4000 1.4100 1.4200 1.4300 1.4400 1.4500 1.4600 1.4700 1.4800 1.4900

Columns 151 through 160

1.5000 1.5100 1.5200 1.5300 1.5400 1.5500 1.5600 1.5700 1.5800 1.5900

Columns 161 through 170

1.6000 1.6100 1.6200 1.6300 1.6400 1.6500 1.6600 1.6700 1.6800 1.6900

Columns 171 through 180

1.7000 1.7100 1.7200 1.7300 1.7400 1.7500 1.7600 1.7700 1.7800 1.7900

Columns 181 through 190

1.8000 1.8100 1.8200 1.8300 1.8400 1.8500 1.8600 1.8700 1.8800 1.8900

Columns 191 through 200

1.9000 1.9100 1.9200 1.9300 1.9400 1.9500 1.9600 1.9700 1.9800 1.9900

Columns 201 through 210

2.0000 2.0100 2.0200 2.0300 2.0400 2.0500 2.0600 2.0700 2.0800 2.0900

Columns 211 through 220

2.1000 2.1100 2.1200 2.1300 2.1400 2.1500 2.1600 2.1700 2.1800 2.1900

Columns 221 through 230

2.2000 2.2100 2.2200 2.2300 2.2400 2.2500 2.2600 2.2700 2.2800 2.2900

Columns 231 through 240

2.3000 2.3100 2.3200 2.3300 2.3400 2.3500 2.3600 2.3700 2.3800 2.3900

Columns 241 through 250

2.4000 2.4100 2.4200 2.4300 2.4400 2.4500 2.4600 2.4700 2.4800 2.4900

Column 251

2.5000

dn =

[0, (3*exp(-3/400)*sin(17/2000))/2 + 27/8000, (3*exp(-3/200)*sin(17/1000))/2 + 27/4000, (3*exp(-9/400)*sin(51/2000))/2 + 81/8000, (3*exp(-3/100)*sin(17/500))/2 + 27/2000, (3*exp(-

$3/80) \cdot \sin(17/400))/2 + 27/1600, (3 \cdot \exp(-9/200) \cdot \sin(51/1000))/2 + 81/4000, (3 \cdot \exp(-21/400) \cdot \sin(119/2000))/2 + 189/8000, (3 \cdot \exp(-3/50) \cdot \sin(17/250))/2 + 27/1000, (3 \cdot \exp(-27/400) \cdot \sin(153/2000))/2 + 243/8000, (3 \cdot \exp(-3/40) \cdot \sin(17/200))/2 + 27/800, (3 \cdot \exp(-33/400) \cdot \sin(187/2000))/2 + 297/8000, (3 \cdot \exp(-9/100) \cdot \sin(51/500))/2 + 81/2000, (3 \cdot \exp(-39/400) \cdot \sin(221/2000))/2 + 351/8000, (3 \cdot \exp(-21/200) \cdot \sin(119/1000))/2 + 189/4000, (3 \cdot \exp(-9/80) \cdot \sin(51/400))/2 + 81/1600, (3 \cdot \exp(-3/25) \cdot \sin(17/125))/2 + 27/500, (3 \cdot \exp(-51/400) \cdot \sin(289/2000))/2 + 459/8000, (3 \cdot \exp(-27/200) \cdot \sin(153/1000))/2 + 243/4000, (3 \cdot \exp(-57/400) \cdot \sin(323/2000))/2 + 513/8000, (3 \cdot \exp(-3/20) \cdot \sin(17/100))/2 + 27/400, (3 \cdot \exp(-63/400) \cdot \sin(357/2000))/2 + 567/8000, (3 \cdot \exp(-33/200) \cdot \sin(187/1000))/2 + 297/4000, (3 \cdot \exp(-69/400) \cdot \sin(391/2000))/2 + 621/8000, (3 \cdot \exp(-9/50) \cdot \sin(51/250))/2 + 81/1000, (3 \cdot \exp(-3/16) \cdot \sin(17/80))/2 + 27/320, (3 \cdot \exp(-39/200) \cdot \sin(221/1000))/2 + 351/4000, (3 \cdot \exp(-81/400) \cdot \sin(459/2000))/2 + 729/8000, (3 \cdot \exp(-21/100) \cdot \sin(119/500))/2 + 189/2000, (3 \cdot \exp(-87/400) \cdot \sin(493/2000))/2 + 783/8000, (3 \cdot \exp(-9/40) \cdot \sin(51/200))/2 + 81/800, (3 \cdot \exp(-93/400) \cdot \sin(527/2000))/2 + 837/8000, (3 \cdot \exp(-6/25) \cdot \sin(34/125))/2 + 27/250, (3 \cdot \exp(-99/400) \cdot \sin(561/2000))/2 + 891/8000, (3 \cdot \exp(-51/200) \cdot \sin(289/1000))/2 + 459/4000, (3 \cdot \exp(-21/80) \cdot \sin(119/400))/2 + 189/1600, (3 \cdot \exp(-27/100) \cdot \sin(153/500))/2 + 243/2000, (3 \cdot \exp(-111/400) \cdot \sin(629/2000))/2 + 999/8000, (3 \cdot \exp(-57/200) \cdot \sin(323/1000))/2 + 513/4000, (3 \cdot \exp(-117/400) \cdot \sin(663/2000))/2 + 1053/8000, (3 \cdot \exp(-3/10) \cdot \sin(17/50))/2 + 27/200, (3 \cdot \exp(-123/400) \cdot \sin(697/2000))/2 + 1107/8000, (3 \cdot \exp(-63/200) \cdot \sin(357/1000))/2 + 567/4000, (3 \cdot \exp(-129/400) \cdot \sin(731/2000))/2 + 1161/8000, (3 \cdot \exp(-33/100) \cdot \sin(187/500))/2 + 297/2000, (3 \cdot \exp(-27/80) \cdot \sin(153/400))/2 + 243/1600, (3 \cdot \exp(-69/200) \cdot \sin(391/1000))/2 + 621/4000, (3 \cdot \exp(-141/400) \cdot \sin(799/2000))/2 + 1269/8000, (3 \cdot \exp(-9/25) \cdot \sin(51/125))/2 + 81/500, (3 \cdot \exp(-147/400) \cdot \sin(833/2000))/2 + 1323/8000, (3 \cdot \exp(-3/8) \cdot \sin(17/40))/2 + 27/160, (3 \cdot \exp(-153/400) \cdot \sin(867/2000))/2 + 1377/8000, (3 \cdot \exp(-39/100) \cdot \sin(221/500))/2 + 351/2000, (3 \cdot \exp(-159/400) \cdot \sin(901/2000))/2 + 1431/8000, (3 \cdot \exp(-81/200) \cdot \sin(459/1000))/2 + 729/4000, (3 \cdot \exp(-33/80) \cdot \sin(187/400))/2 + 297/1600, (3 \cdot \exp(-21/50) \cdot \sin(119/250))/2 + 189/1000, (3 \cdot \exp(-171/400) \cdot \sin(969/2000))/2 + 1539/8000, (3 \cdot \exp(-87/200) \cdot \sin(493/1000))/2 + 783/4000, (3 \cdot \exp(-177/400) \cdot \sin(1003/2000))/2 + 1593/8000, (3 \cdot \exp(-9/20) \cdot \sin(51/100))/2 + 81/400, (3 \cdot \exp(-183/400) \cdot \sin(1037/2000))/2 + 1647/8000, (3 \cdot \exp(-93/200) \cdot \sin(527/1000))/2 + 837/4000, (3 \cdot \exp(-189/400) \cdot \sin(1071/2000))/2 + 1701/8000, (3 \cdot \exp(-12/25) \cdot \sin(68/125))/2 + 27/125, (3 \cdot \exp(-39/80) \cdot \sin(221/400))/2 + 351/1600, (3 \cdot \exp(-99/200) \cdot \sin(561/1000))/2 + 891/4000, (3 \cdot \exp(-201/400) \cdot \sin(1139/2000))/2 + 1809/8000, (3 \cdot \exp(-51/100) \cdot \sin(289/500))/2 + 459/2000, (3 \cdot \exp(-207/400) \cdot \sin(1173/2000))/2 + 1863/8000, (3 \cdot \exp(-21/40) \cdot \sin(119/200))/2 + 189/800, (3 \cdot \exp(-213/400) \cdot \sin(1207/2000))/2 + 1917/8000, (3 \cdot \exp(-27/50) \cdot \sin(153/250))/2 + 243/1000, (3 \cdot \exp(-219/400) \cdot \sin(1241/2000))/2 + 1971/8000, (3 \cdot \exp(-111/200) \cdot \sin(629/1000))/2 + 999/4000, (3 \cdot \exp(-9/16) \cdot \sin(51/80))/2 + 81/320, (3 \cdot \exp(-57/100) \cdot \sin(323/500))/2 + 513/2000, (3 \cdot \exp(-231/400) \cdot \sin(1309/2000))/2 + 2079/8000, (3 \cdot \exp(-117/200) \cdot \sin(663/1000))/2 + 1053/4000, (3 \cdot \exp(-237/400) \cdot \sin(1343/2000))/2 + 2133/8000, (3 \cdot \exp(-3/5) \cdot \sin(17/25))/2 + 27/100, (3 \cdot \exp(-243/400) \cdot \sin(1377/2000))/2 + 2187/8000, (3 \cdot \exp(-123/200) \cdot \sin(697/1000))/2 + 1107/4000, (3 \cdot \exp(-249/400) \cdot \sin(1411/2000))/2 + 2241/8000, (3 \cdot \exp(-63/100) \cdot \sin(357/500))/2 + 567/2000, (3 \cdot \exp(-51/80) \cdot \sin(289/400))/2 + 459/1600, (3 \cdot \exp(-129/200) \cdot \sin(731/1000))/2 + 1161/4000, (3 \cdot \exp(-261/400) \cdot \sin(1479/2000))/2 + 2349/8000, (3 \cdot \exp(-33/50) \cdot \sin(187/250))/2 + 297/1000, (3 \cdot \exp(-267/400) \cdot \sin(1513/2000))/2 + 2403/8000, (3 \cdot \exp(-27/40) \cdot \sin(153/200))/2 + 243/800,$

$(3 \cdot \exp(-273/400) \cdot \sin(1547/2000))/2 + 2457/8000, (3 \cdot \exp(-69/100) \cdot \sin(391/500))/2 + 621/2000, (3 \cdot \exp(-279/400) \cdot \sin(1581/2000))/2 + 2511/8000, (3 \cdot \exp(-141/200) \cdot \sin(799/1000))/2 + 1269/4000, (3 \cdot \exp(-57/80) \cdot \sin(323/400))/2 + 513/1600, (3 \cdot \exp(-18/25) \cdot \sin(102/125))/2 + 81/250, (3 \cdot \exp(-291/400) \cdot \sin(1649/2000))/2 + 2619/8000, (3 \cdot \exp(-147/200) \cdot \sin(833/1000))/2 + 1323/4000, (3 \cdot \exp(-297/400) \cdot \sin(1683/2000))/2 + 2673/8000, (3 \cdot \exp(-3/4) \cdot \sin(17/20))/2 + 27/80, (3 \cdot \exp(-303/400) \cdot \sin(1717/2000))/2 + 2727/8000, (3 \cdot \exp(-153/200) \cdot \sin(867/1000))/2 + 1377/4000, (3 \cdot \exp(-309/400) \cdot \sin(1751/2000))/2 + 2781/8000, (3 \cdot \exp(-39/50) \cdot \sin(221/250))/2 + 351/1000, (3 \cdot \exp(-63/80) \cdot \sin(357/400))/2 + 567/1600, (3 \cdot \exp(-159/200) \cdot \sin(901/1000))/2 + 1431/4000, (3 \cdot \exp(-321/400) \cdot \sin(1819/2000))/2 + 2889/8000, (3 \cdot \exp(-81/100) \cdot \sin(459/500))/2 + 729/2000, (3 \cdot \exp(-327/400) \cdot \sin(1853/2000))/2 + 2943/8000, (3 \cdot \exp(-33/40) \cdot \sin(187/200))/2 + 297/800, (3 \cdot \exp(-333/400) \cdot \sin(1887/2000))/2 + 2997/8000, (3 \cdot \exp(-21/25) \cdot \sin(119/125))/2 + 189/500, (3 \cdot \exp(-339/400) \cdot \sin(1921/2000))/2 + 3051/8000, (3 \cdot \exp(-171/200) \cdot \sin(969/1000))/2 + 1539/4000, (3 \cdot \exp(-69/80) \cdot \sin(391/400))/2 + 621/1600, (3 \cdot \exp(-87/100) \cdot \sin(493/500))/2 + 783/2000, (3 \cdot \exp(-351/400) \cdot \sin(1989/2000))/2 + 3159/8000, (3 \cdot \exp(-177/200) \cdot \sin(1003/1000))/2 + 1593/4000, (3 \cdot \exp(-357/400) \cdot \sin(2023/2000))/2 + 3213/8000, (3 \cdot \exp(-9/10) \cdot \sin(51/50))/2 + 81/200, (3 \cdot \exp(-363/400) \cdot \sin(2057/2000))/2 + 3267/8000, (3 \cdot \exp(-183/200) \cdot \sin(1037/1000))/2 + 1647/4000, (3 \cdot \exp(-369/400) \cdot \sin(2091/2000))/2 + 3321/8000, (3 \cdot \exp(-93/100) \cdot \sin(527/500))/2 + 837/2000, (3 \cdot \exp(-15/16) \cdot \sin(17/16))/2 + 27/64, (3 \cdot \exp(-189/200) \cdot \sin(1071/1000))/2 + 1701/4000, (3 \cdot \exp(-381/400) \cdot \sin(2159/2000))/2 + 3429/8000, (3 \cdot \exp(-24/25) \cdot \sin(136/125))/2 + 54/125, (3 \cdot \exp(-387/400) \cdot \sin(2193/2000))/2 + 3483/8000, (3 \cdot \exp(-39/40) \cdot \sin(221/200))/2 + 351/800, (3 \cdot \exp(-393/400) \cdot \sin(2227/2000))/2 + 3537/8000, (3 \cdot \exp(-99/100) \cdot \sin(561/500))/2 + 891/2000, (3 \cdot \exp(-399/400) \cdot \sin(2261/2000))/2 + 3591/8000, (3 \cdot \exp(-201/200) \cdot \sin(1139/1000))/2 + 1809/4000, (3 \cdot \exp(-81/80) \cdot \sin(459/400))/2 + 729/1600, (3 \cdot \exp(-51/50) \cdot \sin(289/250))/2 + 459/1000, (3 \cdot \exp(-411/400) \cdot \sin(2329/2000))/2 + 3699/8000, (3 \cdot \exp(-207/200) \cdot \sin(1173/1000))/2 + 1863/4000, (3 \cdot \exp(-417/400) \cdot \sin(2363/2000))/2 + 3753/8000, (3 \cdot \exp(-21/20) \cdot \sin(119/100))/2 + 189/400, (3 \cdot \exp(-423/400) \cdot \sin(2397/2000))/2 + 3807/8000, (3 \cdot \exp(-213/200) \cdot \sin(1207/1000))/2 + 1917/4000, (3 \cdot \exp(-429/400) \cdot \sin(2431/2000))/2 + 3861/8000, (3 \cdot \exp(-27/25) \cdot \sin(153/125))/2 + 243/500, (3 \cdot \exp(-87/80) \cdot \sin(493/400))/2 + 783/1600, (3 \cdot \exp(-219/200) \cdot \sin(1241/1000))/2 + 1971/4000, (3 \cdot \exp(-441/400) \cdot \sin(2499/2000))/2 + 3969/8000, (3 \cdot \exp(-111/100) \cdot \sin(629/500))/2 + 999/2000, (3 \cdot \exp(-447/400) \cdot \sin(2533/2000))/2 + 4023/8000, (3 \cdot \exp(-9/8) \cdot \sin(51/40))/2 + 81/160, (3 \cdot \exp(-453/400) \cdot \sin(2567/2000))/2 + 4077/8000, (3 \cdot \exp(-57/50) \cdot \sin(323/250))/2 + 513/1000, (3 \cdot \exp(-459/400) \cdot \sin(2601/2000))/2 + 4131/8000, (3 \cdot \exp(-231/200) \cdot \sin(1309/1000))/2 + 2079/4000, (3 \cdot \exp(-93/80) \cdot \sin(527/400))/2 + 837/1600, (3 \cdot \exp(-117/100) \cdot \sin(663/500))/2 + 1053/2000, (3 \cdot \exp(-471/400) \cdot \sin(2669/2000))/2 + 4239/8000, (3 \cdot \exp(-237/200) \cdot \sin(1343/1000))/2 + 2133/4000, (3 \cdot \exp(-477/400) \cdot \sin(2703/2000))/2 + 4293/8000, (3 \cdot \exp(-6/5) \cdot \sin(34/25))/2 + 27/50, (3 \cdot \exp(-483/400) \cdot \sin(2737/2000))/2 + 4347/8000, (3 \cdot \exp(-243/200) \cdot \sin(1377/1000))/2 + 2187/4000, (3 \cdot \exp(-489/400) \cdot \sin(2771/2000))/2 + 4401/8000, (3 \cdot \exp(-123/100) \cdot \sin(697/500))/2 + 1107/2000, (3 \cdot \exp(-99/80) \cdot \sin(561/400))/2 + 891/1600, (3 \cdot \exp(-249/200) \cdot \sin(1411/1000))/2 + 2241/4000, (3 \cdot \exp(-501/400) \cdot \sin(2839/2000))/2 + 4509/8000, (3 \cdot \exp(-63/50) \cdot \sin(357/250))/2 + 567/1000, (3 \cdot \exp(-507/400) \cdot \sin(2873/2000))/2 + 4563/8000, (3 \cdot \exp(-51/40) \cdot \sin(289/200))/2 + 459/800, (3 \cdot \exp(-513/400) \cdot \sin(2907/2000))/2 + 4617/8000, (3 \cdot \exp(-129/100) \cdot \sin(731/500))/2 + 1161/2000, (3 \cdot \exp(-$

$519/400 \cdot \sin(2941/2000))/2 + 4671/8000, (3 \cdot \exp(-261/200) \cdot \sin(1479/1000))/2 + 2349/4000,$
 $(3 \cdot \exp(-21/16) \cdot \sin(119/80))/2 + 189/320, (3 \cdot \exp(-33/25) \cdot \sin(187/125))/2 + 297/500, (3 \cdot \exp(-$
 $531/400) \cdot \sin(3009/2000))/2 + 4779/8000, (3 \cdot \exp(-267/200) \cdot \sin(1513/1000))/2 + 2403/4000,$
 $(3 \cdot \exp(-537/400) \cdot \sin(3043/2000))/2 + 4833/8000, (3 \cdot \exp(-27/20) \cdot \sin(153/100))/2 + 243/400,$
 $(3 \cdot \exp(-543/400) \cdot \sin(3077/2000))/2 + 4887/8000, (3 \cdot \exp(-273/200) \cdot \sin(1547/1000))/2 +$
 $2457/4000, (3 \cdot \exp(-549/400) \cdot \sin(3111/2000))/2 + 4941/8000, (3 \cdot \exp(-69/50) \cdot \sin(391/250))/2$
 $+ 621/1000, (3 \cdot \exp(-111/80) \cdot \sin(629/400))/2 + 999/1600, (3 \cdot \exp(-279/200) \cdot \sin(1581/1000))/2$
 $+ 2511/4000, (3 \cdot \exp(-561/400) \cdot \sin(3179/2000))/2 + 5049/8000, (3 \cdot \exp(-$
 $141/100) \cdot \sin(799/500))/2 + 1269/2000, (3 \cdot \exp(-567/400) \cdot \sin(3213/2000))/2 + 5103/8000,$
 $(3 \cdot \exp(-57/40) \cdot \sin(323/200))/2 + 513/800, (3 \cdot \exp(-573/400) \cdot \sin(3247/2000))/2 + 5157/8000,$
 $(3 \cdot \exp(-36/25) \cdot \sin(204/125))/2 + 81/125, (3 \cdot \exp(-579/400) \cdot \sin(3281/2000))/2 + 5211/8000,$
 $(3 \cdot \exp(-291/200) \cdot \sin(1649/1000))/2 + 2619/4000, (3 \cdot \exp(-117/80) \cdot \sin(663/400))/2 +$
 $1053/1600, (3 \cdot \exp(-147/100) \cdot \sin(833/500))/2 + 1323/2000, (3 \cdot \exp(-$
 $591/400) \cdot \sin(3349/2000))/2 + 5319/8000, (3 \cdot \exp(-297/200) \cdot \sin(1683/1000))/2 + 2673/4000,$
 $(3 \cdot \exp(-597/400) \cdot \sin(3383/2000))/2 + 5373/8000, (3 \cdot \exp(-3/2) \cdot \sin(17/10))/2 + 27/40, (3 \cdot \exp(-$
 $603/400) \cdot \sin(3417/2000))/2 + 5427/8000, (3 \cdot \exp(-303/200) \cdot \sin(1717/1000))/2 + 2727/4000,$
 $(3 \cdot \exp(-609/400) \cdot \sin(3451/2000))/2 + 5481/8000, (3 \cdot \exp(-153/100) \cdot \sin(867/500))/2 +$
 $1377/2000, (3 \cdot \exp(-123/80) \cdot \sin(697/400))/2 + 1107/1600, (3 \cdot \exp(-309/200) \cdot \sin(1751/1000))/2$
 $+ 2781/4000, (3 \cdot \exp(-621/400) \cdot \sin(3519/2000))/2 + 5589/8000, (3 \cdot \exp(-$
 $39/25) \cdot \sin(221/125))/2 + 351/500, (3 \cdot \exp(-627/400) \cdot \sin(3553/2000))/2 + 5643/8000, (3 \cdot \exp(-$
 $63/40) \cdot \sin(357/200))/2 + 567/800, (3 \cdot \exp(-633/400) \cdot \sin(3587/2000))/2 + 5697/8000, (3 \cdot \exp(-$
 $159/100) \cdot \sin(901/500))/2 + 1431/2000, (3 \cdot \exp(-639/400) \cdot \sin(3621/2000))/2 + 5751/8000,$
 $(3 \cdot \exp(-321/200) \cdot \sin(1819/1000))/2 + 2889/4000, (3 \cdot \exp(-129/80) \cdot \sin(731/400))/2 +$
 $1161/1600, (3 \cdot \exp(-81/50) \cdot \sin(459/250))/2 + 729/1000, (3 \cdot \exp(-651/400) \cdot \sin(3689/2000))/2 +$
 $5859/8000, (3 \cdot \exp(-327/200) \cdot \sin(1853/1000))/2 + 2943/4000, (3 \cdot \exp(-$
 $657/400) \cdot \sin(3723/2000))/2 + 5913/8000, (3 \cdot \exp(-33/20) \cdot \sin(187/100))/2 + 297/400, (3 \cdot \exp(-$
 $663/400) \cdot \sin(3757/2000))/2 + 5967/8000, (3 \cdot \exp(-333/200) \cdot \sin(1887/1000))/2 + 2997/4000,$
 $(3 \cdot \exp(-669/400) \cdot \sin(3791/2000))/2 + 6021/8000, (3 \cdot \exp(-42/25) \cdot \sin(238/125))/2 + 189/250,$
 $(3 \cdot \exp(-27/16) \cdot \sin(153/80))/2 + 243/320, (3 \cdot \exp(-339/200) \cdot \sin(1921/1000))/2 + 3051/4000,$
 $(3 \cdot \exp(-681/400) \cdot \sin(3859/2000))/2 + 6129/8000, (3 \cdot \exp(-171/100) \cdot \sin(969/500))/2 +$
 $1539/2000, (3 \cdot \exp(-687/400) \cdot \sin(3893/2000))/2 + 6183/8000, (3 \cdot \exp(-69/40) \cdot \sin(391/200))/2$
 $+ 621/800, (3 \cdot \exp(-693/400) \cdot \sin(3927/2000))/2 + 6237/8000, (3 \cdot \exp(-87/50) \cdot \sin(493/250))/2 +$
 $783/1000, (3 \cdot \exp(-699/400) \cdot \sin(3961/2000))/2 + 6291/8000, (3 \cdot \exp(-$
 $351/200) \cdot \sin(1989/1000))/2 + 3159/4000, (3 \cdot \exp(-141/80) \cdot \sin(799/400))/2 + 1269/1600,$
 $(3 \cdot \exp(-177/100) \cdot \sin(1003/500))/2 + 1593/2000, (3 \cdot \exp(-711/400) \cdot \sin(4029/2000))/2 +$
 $6399/8000, (3 \cdot \exp(-357/200) \cdot \sin(2023/1000))/2 + 3213/4000, (3 \cdot \exp(-$
 $717/400) \cdot \sin(4063/2000))/2 + 6453/8000, (3 \cdot \exp(-9/5) \cdot \sin(51/25))/2 + 81/100, (3 \cdot \exp(-$
 $723/400) \cdot \sin(4097/2000))/2 + 6507/8000, (3 \cdot \exp(-363/200) \cdot \sin(2057/1000))/2 + 3267/4000,$
 $(3 \cdot \exp(-729/400) \cdot \sin(4131/2000))/2 + 6561/8000, (3 \cdot \exp(-183/100) \cdot \sin(1037/500))/2 +$
 $1647/2000, (3 \cdot \exp(-147/80) \cdot \sin(833/400))/2 + 1323/1600, (3 \cdot \exp(-369/200) \cdot \sin(2091/1000))/2$
 $+ 3321/4000, (3 \cdot \exp(-741/400) \cdot \sin(4199/2000))/2 + 6669/8000, (3 \cdot \exp(-$
 $93/50) \cdot \sin(527/250))/2 + 837/1000, (3 \cdot \exp(-747/400) \cdot \sin(4233/2000))/2 + 6723/8000, (3 \cdot \exp(-$
 $15/8) \cdot \sin(17/8))/2 + 27/32]$

v =

$$(51*\cos((17*t)/20)*\exp(-3*t/4))/40 - (9*\sin((17*t)/20)*\exp(-3*t/4))/8 + 27/80$$

vn =

$$\begin{aligned} & [129/80, (51*\cos(17/2000)*\exp(-3/400))/40 - (9*\exp(-3/400)*\sin(17/2000))/8 + 27/80, \\ & (51*\cos(17/1000)*\exp(-3/200))/40 - (9*\exp(-3/200)*\sin(17/1000))/8 + 27/80, \\ & (51*\cos(51/2000)*\exp(-9/400))/40 - (9*\exp(-9/400)*\sin(51/2000))/8 + 27/80, \\ & (51*\cos(17/500)*\exp(-3/100))/40 - (9*\exp(-3/100)*\sin(17/500))/8 + 27/80, \\ & (51*\cos(17/400)*\exp(-3/80))/40 - (9*\exp(-3/80)*\sin(17/400))/8 + 27/80, \\ & (51*\cos(51/1000)*\exp(-9/200))/40 - (9*\exp(-9/200)*\sin(51/1000))/8 + 27/80, \\ & (51*\cos(119/2000)*\exp(-21/400))/40 - (9*\exp(-21/400)*\sin(119/2000))/8 + 27/80, \\ & (51*\cos(17/250)*\exp(-3/50))/40 - (9*\exp(-3/50)*\sin(17/250))/8 + 27/80, \\ & (51*\cos(153/2000)*\exp(-27/400))/40 - (9*\exp(-27/400)*\sin(153/2000))/8 + 27/80, \\ & (51*\cos(17/200)*\exp(-3/40))/40 - (9*\exp(-3/40)*\sin(17/200))/8 + 27/80, \\ & (51*\cos(187/2000)*\exp(-33/400))/40 - (9*\exp(-33/400)*\sin(187/2000))/8 + 27/80, \\ & (51*\cos(51/500)*\exp(-9/100))/40 - (9*\exp(-9/100)*\sin(51/500))/8 + 27/80, \\ & (51*\cos(221/2000)*\exp(-39/400))/40 - (9*\exp(-39/400)*\sin(221/2000))/8 + 27/80, \\ & (51*\cos(119/1000)*\exp(-21/200))/40 - (9*\exp(-21/200)*\sin(119/1000))/8 + 27/80, \\ & (51*\cos(51/400)*\exp(-9/80))/40 - (9*\exp(-9/80)*\sin(51/400))/8 + 27/80, (51*\cos(17/125)*\exp(- \\ & 3/25))/40 - (9*\exp(-3/25)*\sin(17/125))/8 + 27/80, (51*\cos(289/2000)*\exp(-51/400))/40 - \\ & (9*\exp(-51/400)*\sin(289/2000))/8 + 27/80, (51*\cos(153/1000)*\exp(-27/200))/40 - (9*\exp(- \\ & 27/200)*\sin(153/1000))/8 + 27/80, (51*\cos(323/2000)*\exp(-57/400))/40 - (9*\exp(- \\ & 57/400)*\sin(323/2000))/8 + 27/80, (51*\cos(17/100)*\exp(-3/20))/40 - (9*\exp(- \\ & 3/20)*\sin(17/100))/8 + 27/80, (51*\cos(357/2000)*\exp(-63/400))/40 - (9*\exp(- \\ & 63/400)*\sin(357/2000))/8 + 27/80, (51*\cos(187/1000)*\exp(-33/200))/40 - (9*\exp(- \\ & 33/200)*\sin(187/1000))/8 + 27/80, (51*\cos(391/2000)*\exp(-69/400))/40 - (9*\exp(- \\ & 69/400)*\sin(391/2000))/8 + 27/80, (51*\cos(51/250)*\exp(-9/50))/40 - (9*\exp(- \\ & 9/50)*\sin(51/250))/8 + 27/80, (51*\cos(17/80)*\exp(-3/16))/40 - (9*\exp(-3/16)*\sin(17/80))/8 + \\ & 27/80, (51*\cos(221/1000)*\exp(-39/200))/40 - (9*\exp(-39/200)*\sin(221/1000))/8 + 27/80, \\ & (51*\cos(459/2000)*\exp(-81/400))/40 - (9*\exp(-81/400)*\sin(459/2000))/8 + 27/80, \\ & (51*\cos(119/500)*\exp(-21/100))/40 - (9*\exp(-21/100)*\sin(119/500))/8 + 27/80, \\ & (51*\cos(493/2000)*\exp(-87/400))/40 - (9*\exp(-87/400)*\sin(493/2000))/8 + 27/80, \\ & (51*\cos(51/200)*\exp(-9/40))/40 - (9*\exp(-9/40)*\sin(51/200))/8 + 27/80, \\ & (51*\cos(527/2000)*\exp(-93/400))/40 - (9*\exp(-93/400)*\sin(527/2000))/8 + 27/80, \\ & (51*\cos(34/125)*\exp(-6/25))/40 - (9*\exp(-6/25)*\sin(34/125))/8 + 27/80, \\ & (51*\cos(561/2000)*\exp(-99/400))/40 - (9*\exp(-99/400)*\sin(561/2000))/8 + 27/80, \\ & (51*\cos(289/1000)*\exp(-51/200))/40 - (9*\exp(-51/200)*\sin(289/1000))/8 + 27/80, \\ & (51*\cos(119/400)*\exp(-21/80))/40 - (9*\exp(-21/80)*\sin(119/400))/8 + 27/80, \\ & (51*\cos(153/500)*\exp(-27/100))/40 - (9*\exp(-27/100)*\sin(153/500))/8 + 27/80, \\ & (51*\cos(629/2000)*\exp(-111/400))/40 - (9*\exp(-111/400)*\sin(629/2000))/8 + 27/80, \end{aligned}$$

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

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

$381/400*\sin(2159/2000))/8 + 27/80, (51*\cos(136/125)*\exp(-24/25))/40 - (9*\exp(-24/25)*\sin(136/125))/8 + 27/80, (51*\cos(2193/2000)*\exp(-387/400))/40 - (9*\exp(-387/400)*\sin(2193/2000))/8 + 27/80, (51*\cos(221/200)*\exp(-39/40))/40 - (9*\exp(-39/40)*\sin(221/200))/8 + 27/80, (51*\cos(2227/2000)*\exp(-393/400))/40 - (9*\exp(-393/400)*\sin(2227/2000))/8 + 27/80, (51*\cos(561/500)*\exp(-99/100))/40 - (9*\exp(-99/100)*\sin(561/500))/8 + 27/80, (51*\cos(2261/2000)*\exp(-399/400))/40 - (9*\exp(-399/400)*\sin(2261/2000))/8 + 27/80, (51*\cos(1139/1000)*\exp(-201/200))/40 - (9*\exp(-201/200)*\sin(1139/1000))/8 + 27/80, (51*\cos(459/400)*\exp(-81/80))/40 - (9*\exp(-81/80)*\sin(459/400))/8 + 27/80, (51*\cos(289/250)*\exp(-51/50))/40 - (9*\exp(-51/50)*\sin(289/250))/8 + 27/80, (51*\cos(2329/2000)*\exp(-411/400))/40 - (9*\exp(-411/400)*\sin(2329/2000))/8 + 27/80, (51*\cos(1173/1000)*\exp(-207/200))/40 - (9*\exp(-207/200)*\sin(1173/1000))/8 + 27/80, (51*\cos(2363/2000)*\exp(-417/400))/40 - (9*\exp(-417/400)*\sin(2363/2000))/8 + 27/80, (51*\cos(119/100)*\exp(-21/20))/40 - (9*\exp(-21/20)*\sin(119/100))/8 + 27/80, (51*\cos(2397/2000)*\exp(-423/400))/40 - (9*\exp(-423/400)*\sin(2397/2000))/8 + 27/80, (51*\cos(1207/1000)*\exp(-213/200))/40 - (9*\exp(-213/200)*\sin(1207/1000))/8 + 27/80, (51*\cos(2431/2000)*\exp(-429/400))/40 - (9*\exp(-429/400)*\sin(2431/2000))/8 + 27/80, (51*\cos(153/125)*\exp(-27/25))/40 - (9*\exp(-27/25)*\sin(153/125))/8 + 27/80, (51*\cos(493/400)*\exp(-87/80))/40 - (9*\exp(-87/80)*\sin(493/400))/8 + 27/80, (51*\cos(1241/1000)*\exp(-219/200))/40 - (9*\exp(-219/200)*\sin(1241/1000))/8 + 27/80, (51*\cos(2499/2000)*\exp(-441/400))/40 - (9*\exp(-441/400)*\sin(2499/2000))/8 + 27/80, (51*\cos(629/500)*\exp(-111/100))/40 - (9*\exp(-111/100)*\sin(629/500))/8 + 27/80, (51*\cos(2533/2000)*\exp(-447/400))/40 - (9*\exp(-447/400)*\sin(2533/2000))/8 + 27/80, (51*\cos(51/40)*\exp(-9/8))/40 - (9*\exp(-9/8)*\sin(51/40))/8 + 27/80, (51*\cos(2567/2000)*\exp(-453/400))/40 - (9*\exp(-453/400)*\sin(2567/2000))/8 + 27/80, (51*\cos(323/250)*\exp(-57/50))/40 - (9*\exp(-57/50)*\sin(323/250))/8 + 27/80, (51*\cos(2601/2000)*\exp(-459/400))/40 - (9*\exp(-459/400)*\sin(2601/2000))/8 + 27/80, (51*\cos(1309/1000)*\exp(-231/200))/40 - (9*\exp(-231/200)*\sin(1309/1000))/8 + 27/80, (51*\cos(527/400)*\exp(-93/80))/40 - (9*\exp(-93/80)*\sin(527/400))/8 + 27/80, (51*\cos(663/500)*\exp(-117/100))/40 - (9*\exp(-117/100)*\sin(663/500))/8 + 27/80, (51*\cos(2669/2000)*\exp(-471/400))/40 - (9*\exp(-471/400)*\sin(2669/2000))/8 + 27/80, (51*\cos(1343/1000)*\exp(-237/200))/40 - (9*\exp(-237/200)*\sin(1343/1000))/8 + 27/80, (51*\cos(2703/2000)*\exp(-477/400))/40 - (9*\exp(-477/400)*\sin(2703/2000))/8 + 27/80, (51*\cos(34/25)*\exp(-6/5))/40 - (9*\exp(-6/5)*\sin(34/25))/8 + 27/80, (51*\cos(2737/2000)*\exp(-483/400))/40 - (9*\exp(-483/400)*\sin(2737/2000))/8 + 27/80, (51*\cos(1377/1000)*\exp(-243/200))/40 - (9*\exp(-243/200)*\sin(1377/1000))/8 + 27/80, (51*\cos(2771/2000)*\exp(-489/400))/40 - (9*\exp(-489/400)*\sin(2771/2000))/8 + 27/80, (51*\cos(697/500)*\exp(-123/100))/40 - (9*\exp(-123/100)*\sin(697/500))/8 + 27/80, (51*\cos(561/400)*\exp(-99/80))/40 - (9*\exp(-99/80)*\sin(561/400))/8 + 27/80, (51*\cos(1411/1000)*\exp(-249/200))/40 - (9*\exp(-249/200)*\sin(1411/1000))/8 + 27/80, (51*\cos(2839/2000)*\exp(-501/400))/40 - (9*\exp(-501/400)*\sin(2839/2000))/8 + 27/80, (51*\cos(357/250)*\exp(-63/50))/40 - (9*\exp(-63/50)*\sin(357/250))/8 + 27/80, (51*\cos(2873/2000)*\exp(-507/400))/40 - (9*\exp(-507/400)*\sin(2873/2000))/8 + 27/80, (51*\cos(289/200)*\exp(-51/40))/40 - (9*\exp(-51/40)*\sin(289/200))/8 + 27/80, (51*\cos(2907/2000)*\exp(-513/400))/40 - (9*\exp(-$

$513/400 * \sin(2907/2000) / 8 + 27/80, (51 * \cos(731/500) * \exp(-129/100)) / 40 - (9 * \exp(-129/100) * \sin(731/500)) / 8 + 27/80, (51 * \cos(2941/2000) * \exp(-519/400)) / 40 - (9 * \exp(-519/400) * \sin(2941/2000)) / 8 + 27/80, (51 * \cos(1479/1000) * \exp(-261/200)) / 40 - (9 * \exp(-261/200) * \sin(1479/1000)) / 8 + 27/80, (51 * \cos(119/80) * \exp(-21/16)) / 40 - (9 * \exp(-21/16) * \sin(119/80)) / 8 + 27/80, (51 * \cos(187/125) * \exp(-33/25)) / 40 - (9 * \exp(-33/25) * \sin(187/125)) / 8 + 27/80, (51 * \cos(3009/2000) * \exp(-531/400)) / 40 - (9 * \exp(-531/400) * \sin(3009/2000)) / 8 + 27/80, (51 * \cos(1513/1000) * \exp(-267/200)) / 40 - (9 * \exp(-267/200) * \sin(1513/1000)) / 8 + 27/80, (51 * \cos(3043/2000) * \exp(-537/400)) / 40 - (9 * \exp(-537/400) * \sin(3043/2000)) / 8 + 27/80, (51 * \cos(153/100) * \exp(-27/20)) / 40 - (9 * \exp(-27/20) * \sin(153/100)) / 8 + 27/80, (51 * \cos(3077/2000) * \exp(-543/400)) / 40 - (9 * \exp(-543/400) * \sin(3077/2000)) / 8 + 27/80, (51 * \cos(1547/1000) * \exp(-273/200)) / 40 - (9 * \exp(-273/200) * \sin(1547/1000)) / 8 + 27/80, (51 * \cos(3111/2000) * \exp(-549/400)) / 40 - (9 * \exp(-549/400) * \sin(3111/2000)) / 8 + 27/80, (51 * \cos(391/250) * \exp(-69/50)) / 40 - (9 * \exp(-69/50) * \sin(391/250)) / 8 + 27/80, (51 * \cos(629/400) * \exp(-111/80)) / 40 - (9 * \exp(-111/80) * \sin(629/400)) / 8 + 27/80, (51 * \cos(1581/1000) * \exp(-279/200)) / 40 - (9 * \exp(-279/200) * \sin(1581/1000)) / 8 + 27/80, (51 * \cos(3179/2000) * \exp(-561/400)) / 40 - (9 * \exp(-561/400) * \sin(3179/2000)) / 8 + 27/80, (51 * \cos(799/500) * \exp(-141/100)) / 40 - (9 * \exp(-141/100) * \sin(799/500)) / 8 + 27/80, (51 * \cos(3213/2000) * \exp(-567/400)) / 40 - (9 * \exp(-567/400) * \sin(3213/2000)) / 8 + 27/80, (51 * \cos(323/200) * \exp(-57/40)) / 40 - (9 * \exp(-57/40) * \sin(323/200)) / 8 + 27/80, (51 * \cos(3247/2000) * \exp(-573/400)) / 40 - (9 * \exp(-573/400) * \sin(3247/2000)) / 8 + 27/80, (51 * \cos(204/125) * \exp(-36/25)) / 40 - (9 * \exp(-36/25) * \sin(204/125)) / 8 + 27/80, (51 * \cos(3281/2000) * \exp(-579/400)) / 40 - (9 * \exp(-579/400) * \sin(3281/2000)) / 8 + 27/80, (51 * \cos(1649/1000) * \exp(-291/200)) / 40 - (9 * \exp(-291/200) * \sin(1649/1000)) / 8 + 27/80, (51 * \cos(663/400) * \exp(-117/80)) / 40 - (9 * \exp(-117/80) * \sin(663/400)) / 8 + 27/80, (51 * \cos(833/500) * \exp(-147/100)) / 40 - (9 * \exp(-147/100) * \sin(833/500)) / 8 + 27/80, (51 * \cos(3349/2000) * \exp(-591/400)) / 40 - (9 * \exp(-591/400) * \sin(3349/2000)) / 8 + 27/80, (51 * \cos(1683/1000) * \exp(-297/200)) / 40 - (9 * \exp(-297/200) * \sin(1683/1000)) / 8 + 27/80, (51 * \cos(3383/2000) * \exp(-597/400)) / 40 - (9 * \exp(-597/400) * \sin(3383/2000)) / 8 + 27/80, (51 * \cos(17/10) * \exp(-3/2)) / 40 - (9 * \exp(-3/2) * \sin(17/10)) / 8 + 27/80, (51 * \cos(3417/2000) * \exp(-603/400)) / 40 - (9 * \exp(-603/400) * \sin(3417/2000)) / 8 + 27/80, (51 * \cos(1717/1000) * \exp(-303/200)) / 40 - (9 * \exp(-303/200) * \sin(1717/1000)) / 8 + 27/80, (51 * \cos(3451/2000) * \exp(-609/400)) / 40 - (9 * \exp(-609/400) * \sin(3451/2000)) / 8 + 27/80, (51 * \cos(867/500) * \exp(-153/100)) / 40 - (9 * \exp(-153/100) * \sin(867/500)) / 8 + 27/80, (51 * \cos(697/400) * \exp(-123/80)) / 40 - (9 * \exp(-123/80) * \sin(697/400)) / 8 + 27/80, (51 * \cos(1751/1000) * \exp(-309/200)) / 40 - (9 * \exp(-309/200) * \sin(1751/1000)) / 8 + 27/80, (51 * \cos(3519/2000) * \exp(-621/400)) / 40 - (9 * \exp(-621/400) * \sin(3519/2000)) / 8 + 27/80, (51 * \cos(221/125) * \exp(-39/25)) / 40 - (9 * \exp(-39/25) * \sin(221/125)) / 8 + 27/80, (51 * \cos(3553/2000) * \exp(-627/400)) / 40 - (9 * \exp(-627/400) * \sin(3553/2000)) / 8 + 27/80, (51 * \cos(357/200) * \exp(-63/40)) / 40 - (9 * \exp(-63/40) * \sin(357/200)) / 8 + 27/80, (51 * \cos(3587/2000) * \exp(-633/400)) / 40 - (9 * \exp(-633/400) * \sin(3587/2000)) / 8 + 27/80, (51 * \cos(901/500) * \exp(-159/100)) / 40 - (9 * \exp(-159/100) * \sin(901/500)) / 8 + 27/80, (51 * \cos(3621/2000) * \exp(-639/400)) / 40 - (9 * \exp(-639/400) * \sin(3621/2000)) / 8 + 27/80, (51 * \cos(1819/1000) * \exp(-321/200)) / 40 - (9 * \exp(-321/200) * \sin(1819/1000)) / 8 + 27/80, (51 * \cos(731/400) * \exp(-129/80)) / 40 - (9 * \exp(-$

$$\begin{aligned}
& 129/80) \cdot \sin(731/400))/8 + 27/80, (51 \cdot \cos(459/250) \cdot \exp(-81/50))/40 - (9 \cdot \exp(- \\
& 81/50) \cdot \sin(459/250))/8 + 27/80, (51 \cdot \cos(3689/2000) \cdot \exp(-651/400))/40 - (9 \cdot \exp(- \\
& 651/400) \cdot \sin(3689/2000))/8 + 27/80, (51 \cdot \cos(1853/1000) \cdot \exp(-327/200))/40 - (9 \cdot \exp(- \\
& 327/200) \cdot \sin(1853/1000))/8 + 27/80, (51 \cdot \cos(3723/2000) \cdot \exp(-657/400))/40 - (9 \cdot \exp(- \\
& 657/400) \cdot \sin(3723/2000))/8 + 27/80, (51 \cdot \cos(187/100) \cdot \exp(-33/20))/40 - (9 \cdot \exp(- \\
& 33/20) \cdot \sin(187/100))/8 + 27/80, (51 \cdot \cos(3757/2000) \cdot \exp(-663/400))/40 - (9 \cdot \exp(- \\
& 663/400) \cdot \sin(3757/2000))/8 + 27/80, (51 \cdot \cos(1887/1000) \cdot \exp(-333/200))/40 - (9 \cdot \exp(- \\
& 333/200) \cdot \sin(1887/1000))/8 + 27/80, (51 \cdot \cos(3791/2000) \cdot \exp(-669/400))/40 - (9 \cdot \exp(- \\
& 669/400) \cdot \sin(3791/2000))/8 + 27/80, (51 \cdot \cos(238/125) \cdot \exp(-42/25))/40 - (9 \cdot \exp(- \\
& 42/25) \cdot \sin(238/125))/8 + 27/80, (51 \cdot \cos(153/80) \cdot \exp(-27/16))/40 - (9 \cdot \exp(- \\
& 27/16) \cdot \sin(153/80))/8 + 27/80, (51 \cdot \cos(1921/1000) \cdot \exp(-339/200))/40 - (9 \cdot \exp(- \\
& 339/200) \cdot \sin(1921/1000))/8 + 27/80, (51 \cdot \cos(3859/2000) \cdot \exp(-681/400))/40 - (9 \cdot \exp(- \\
& 681/400) \cdot \sin(3859/2000))/8 + 27/80, (51 \cdot \cos(969/500) \cdot \exp(-171/100))/40 - (9 \cdot \exp(- \\
& 171/100) \cdot \sin(969/500))/8 + 27/80, (51 \cdot \cos(3893/2000) \cdot \exp(-687/400))/40 - (9 \cdot \exp(- \\
& 687/400) \cdot \sin(3893/2000))/8 + 27/80, (51 \cdot \cos(391/200) \cdot \exp(-69/40))/40 - (9 \cdot \exp(- \\
& 69/40) \cdot \sin(391/200))/8 + 27/80, (51 \cdot \cos(3927/2000) \cdot \exp(-693/400))/40 - (9 \cdot \exp(- \\
& 693/400) \cdot \sin(3927/2000))/8 + 27/80, (51 \cdot \cos(493/250) \cdot \exp(-87/50))/40 - (9 \cdot \exp(- \\
& 87/50) \cdot \sin(493/250))/8 + 27/80, (51 \cdot \cos(3961/2000) \cdot \exp(-699/400))/40 - (9 \cdot \exp(- \\
& 699/400) \cdot \sin(3961/2000))/8 + 27/80, (51 \cdot \cos(1989/1000) \cdot \exp(-351/200))/40 - (9 \cdot \exp(- \\
& 351/200) \cdot \sin(1989/1000))/8 + 27/80, (51 \cdot \cos(799/400) \cdot \exp(-141/80))/40 - (9 \cdot \exp(- \\
& 141/80) \cdot \sin(799/400))/8 + 27/80, (51 \cdot \cos(1003/500) \cdot \exp(-177/100))/40 - (9 \cdot \exp(- \\
& 177/100) \cdot \sin(1003/500))/8 + 27/80, (51 \cdot \cos(4029/2000) \cdot \exp(-711/400))/40 - (9 \cdot \exp(- \\
& 711/400) \cdot \sin(4029/2000))/8 + 27/80, (51 \cdot \cos(2023/1000) \cdot \exp(-357/200))/40 - (9 \cdot \exp(- \\
& 357/200) \cdot \sin(2023/1000))/8 + 27/80, (51 \cdot \cos(4063/2000) \cdot \exp(-717/400))/40 - (9 \cdot \exp(- \\
& 717/400) \cdot \sin(4063/2000))/8 + 27/80, (51 \cdot \cos(51/25) \cdot \exp(-9/5))/40 - (9 \cdot \exp(- \\
& 9/5) \cdot \sin(51/25))/8 + 27/80, (51 \cdot \cos(4097/2000) \cdot \exp(-723/400))/40 - (9 \cdot \exp(- \\
& 723/400) \cdot \sin(4097/2000))/8 + 27/80, (51 \cdot \cos(2057/1000) \cdot \exp(-363/200))/40 - (9 \cdot \exp(- \\
& 363/200) \cdot \sin(2057/1000))/8 + 27/80, (51 \cdot \cos(4131/2000) \cdot \exp(-729/400))/40 - (9 \cdot \exp(- \\
& 729/400) \cdot \sin(4131/2000))/8 + 27/80, (51 \cdot \cos(1037/500) \cdot \exp(-183/100))/40 - (9 \cdot \exp(- \\
& 183/100) \cdot \sin(1037/500))/8 + 27/80, (51 \cdot \cos(833/400) \cdot \exp(-147/80))/40 - (9 \cdot \exp(- \\
& 147/80) \cdot \sin(833/400))/8 + 27/80, (51 \cdot \cos(2091/1000) \cdot \exp(-369/200))/40 - (9 \cdot \exp(- \\
& 369/200) \cdot \sin(2091/1000))/8 + 27/80, (51 \cdot \cos(4199/2000) \cdot \exp(-741/400))/40 - (9 \cdot \exp(- \\
& 741/400) \cdot \sin(4199/2000))/8 + 27/80, (51 \cdot \cos(527/250) \cdot \exp(-93/50))/40 - (9 \cdot \exp(- \\
& 93/50) \cdot \sin(527/250))/8 + 27/80, (51 \cdot \cos(4233/2000) \cdot \exp(-747/400))/40 - (9 \cdot \exp(- \\
& 747/400) \cdot \sin(4233/2000))/8 + 27/80, (51 \cdot \cos(17/8) \cdot \exp(-15/8))/40 - (9 \cdot \exp(- \\
& 15/8) \cdot \sin(17/8))/8 + 27/80]
\end{aligned}$$

a =

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

an =

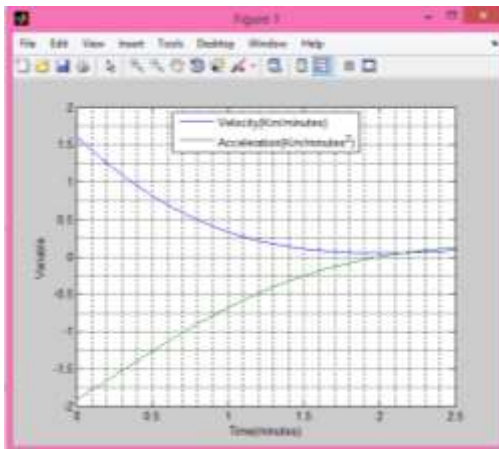
[-153/80, - (153*cos(17/2000)*exp(-3/400))/80 - (6*exp(-3/400)*sin(17/2000))/25, -
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 3/80))/80 - (6*exp(-3/80)*sin(17/400))/25, - (153*cos(51/1000)*exp(-9/200))/80 - (6*exp(-
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 (6*exp(-9/100)*sin(51/500))/25, - (153*cos(221/2000)*exp(-39/400))/80 - (6*exp(-
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 - (153*cos(17/125)*exp(-3/25))/80 - (6*exp(-3/25)*sin(17/125))/25, - (153*cos(289/2000)*exp(-
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 - (153*cos(357/2000)*exp(-63/400))/80 - (6*exp(-63/400)*sin(357/2000))/25, -
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 (153*cos(391/2000)*exp(-69/400))/80 - (6*exp(-69/400)*sin(391/2000))/25, -
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$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 \cdot \sin(391/250))/25, - (153 \cdot \cos(629/400) \cdot \exp(-111/80))/80 - (6 \cdot \exp(-111/80) \cdot \sin(629/400))/25, - (153 \cdot \cos(1581/1000) \cdot \exp(-279/200))/80 - (6 \cdot \exp(-279/200) \cdot \sin(1581/1000))/25, - (153 \cdot \cos(3179/2000) \cdot \exp(-561/400))/80 - (6 \cdot \exp(-561/400) \cdot \sin(3179/2000))/25, - (153 \cdot \cos(799/500) \cdot \exp(-141/100))/80 - (6 \cdot \exp(-141/100) \cdot \sin(799/500))/25, - (153 \cdot \cos(3213/2000) \cdot \exp(-567/400))/80 - (6 \cdot \exp(-567/400) \cdot \sin(3213/2000))/25, - (153 \cdot \cos(323/200) \cdot \exp(-57/40))/80 - (6 \cdot \exp(-57/40) \cdot \sin(323/200))/25, - (153 \cdot \cos(3247/2000) \cdot \exp(-573/400))/80 - (6 \cdot \exp(-573/400) \cdot \sin(3247/2000))/25, - (153 \cdot \cos(204/125) \cdot \exp(-36/25))/80 - (6 \cdot \exp(-36/25) \cdot \sin(204/125))/25, - (153 \cdot \cos(3281/2000) \cdot \exp(-579/400))/80 - (6 \cdot \exp(-579/400) \cdot \sin(3281/2000))/25, - (153 \cdot \cos(1649/1000) \cdot \exp(-291/200))/80 - (6 \cdot \exp(-291/200) \cdot \sin(1649/1000))/25, - (153 \cdot \cos(663/400) \cdot \exp(-117/80))/80 - (6 \cdot \exp(-117/80) \cdot \sin(663/400))/25, - (153 \cdot \cos(833/500) \cdot \exp(-147/100))/80 - (6 \cdot \exp(-147/100) \cdot \sin(833/500))/25, - (153 \cdot \cos(3349/2000) \cdot \exp(-591/400))/80 - (6 \cdot \exp(-591/400) \cdot \sin(3349/2000))/25, - (153 \cdot \cos(1683/1000) \cdot \exp(-297/200))/80 - (6 \cdot \exp(-297/200) \cdot \sin(1683/1000))/25, - (153 \cdot \cos(3383/2000) \cdot \exp(-597/400))/80 - (6 \cdot \exp(-597/400) \cdot \sin(3383/2000))/25, - (153 \cdot \cos(17/10) \cdot \exp(-3/2))/80 - (6 \cdot \exp(-3/2) \cdot \sin(17/10))/25, - (153 \cdot \cos(3417/2000) \cdot \exp(-603/400))/80 - (6 \cdot \exp(-603/400) \cdot \sin(3417/2000))/25, - (153 \cdot \cos(1717/1000) \cdot \exp(-303/200))/80 - (6 \cdot \exp(-303/200) \cdot \sin(1717/1000))/25, - (153 \cdot \cos(3451/2000) \cdot \exp(-609/400))/80 - (6 \cdot \exp(-609/400) \cdot \sin(3451/2000))/25, - (153 \cdot \cos(867/500) \cdot \exp(-153/100))/80 - (6 \cdot \exp(-153/100) \cdot \sin(867/500))/25, - (153 \cdot \cos(697/400) \cdot \exp(-123/80))/80 - (6 \cdot \exp(-123/80) \cdot \sin(697/400))/25, - (153 \cdot \cos(1751/1000) \cdot \exp(-309/200))/80 - (6 \cdot \exp(-309/200) \cdot \sin(1751/1000))/25, - (153 \cdot \cos(3519/2000) \cdot \exp(-621/400))/80 - (6 \cdot \exp(-621/400) \cdot \sin(3519/2000))/25, - (153 \cdot \cos(221/125) \cdot \exp(-39/25))/80 - (6 \cdot \exp(-39/25) \cdot \sin(221/125))/25, - (153 \cdot \cos(3553/2000) \cdot \exp(-627/400))/80 - (6 \cdot \exp(-627/400) \cdot \sin(3553/2000))/25, - (153 \cdot \cos(357/200) \cdot \exp(-63/40))/80 - (6 \cdot \exp(-63/40) \cdot \sin(357/200))/25, - (153 \cdot \cos(3587/2000) \cdot \exp(-633/400))/80 - (6 \cdot \exp(-633/400) \cdot \sin(3587/2000))/25, - (153 \cdot \cos(901/500) \cdot \exp(-159/100))/80 - (6 \cdot \exp(-159/100) \cdot \sin(901/500))/25, - (153 \cdot \cos(3621/2000) \cdot \exp(-639/400))/80 - (6 \cdot \exp(-639/400) \cdot \sin(3621/2000))/25, - (153 \cdot \cos(1819/1000) \cdot \exp(-321/200))/80 - (6 \cdot \exp(-321/200) \cdot \sin(1819/1000))/25, - (153 \cdot \cos(731/400) \cdot \exp(-129/80))/80 - (6 \cdot \exp(-129/80) \cdot \sin(731/400))/25, - (153 \cdot \cos(459/250) \cdot \exp(-81/50))/80 - (6 \cdot \exp(-81/50) \cdot \sin(459/250))/25, - (153 \cdot \cos(3689/2000) \cdot \exp(-651/400))/80 - (6 \cdot \exp(-651/400) \cdot \sin(3689/2000))/25, - (153 \cdot \cos(1853/1000) \cdot \exp(-327/200))/80 - (6 \cdot \exp(-327/200) \cdot \sin(1853/1000))/25, - (153 \cdot \cos(3723/2000) \cdot \exp(-657/400))/80 - (6 \cdot \exp(-657/400) \cdot \sin(3723/2000))/25, - (153 \cdot \cos(187/100) \cdot \exp(-33/20))/80 - (6 \cdot \exp(-33/20) \cdot \sin(187/100))/25, - (153 \cdot \cos(3757/2000) \cdot \exp(-663/400))/80 - (6 \cdot \exp(-663/400) \cdot \sin(3757/2000))/25, - (153 \cdot \cos(1887/1000) \cdot \exp(-333/200))/80 - (6 \cdot \exp(-333/200) \cdot \sin(1887/1000))/25, - (153 \cdot \cos(3791/2000) \cdot \exp(-669/400))/80 - (6 \cdot \exp(-669/400) \cdot \sin(3791/2000))/25, - (153 \cdot \cos(238/125) \cdot \exp(-42/25))/80 - (6 \cdot \exp(-42/25) \cdot \sin(238/125))/25, - (153 \cdot \cos(153/80) \cdot \exp(-27/16))/80 - (6 \cdot \exp(-27/16) \cdot \sin(153/80))/25, - (153 \cdot \cos(1921/1000) \cdot \exp(-339/200))/80 - (6 \cdot \exp(-339/200) \cdot \sin(1921/1000))/25, - (153 \cdot \cos(3859/2000) \cdot \exp(-681/400))/80 - (6 \cdot \exp(-681/400) \cdot \sin(3859/2000))/25, - (153 \cdot \cos(969/500) \cdot \exp(-171/100))/80 - (6 \cdot \exp(-171/100) \cdot \sin(969/500))/25, -$

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


```

1. editor
   commandwindow
clear
clc
syms x
y=5*power(sin(5*x),5)
V=(y^2*pi)
Vintd= int(V,0,pi)
Vint=double(Vintd)
Command window

```

y =

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

$$V =$$

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

$$Vintd =$$

$$(1575*\pi^2)/256$$

$$Vint =$$

$$60.7212$$