

ADEYEMO ADEWALE SAMUEL
16/ENG06/004
MECHANICAL ENGINEERING

QUESTION 4 (A)
CODES

```
commandwindow
clear
clc
close all
syms w x y z
a=[0 10 4 -2;-3 -17 1 2;1 1 1 0;8 -34 16 -10]
b=[-4 2 6 4]
c=[w;x;y;z]
```

OUTPUT

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

b =
    -4      2      6      4

c =
     w
     x
     y
     z
>>
```

QUESTION 4 (B)

CODES

```
commandwindow
clear
clc
close all
syms t
d =1.5*exp(-0.75*t)*sin(0.85*t)+0.375*t
tn=[0:0.001:0.25]
v=diff(d)
vkm=v/1000
a=diff(v)
akm=a/1000
vn=subs(vkm,tn)
an=subs(akm,tn)
plot(tn,vn,tn,an)
xlabel('time')
ylabel('variable')
legend('distance' 'time' 'velocity' 'acceleration')
grid on
grid minor
axis tight
```

OUTPUT

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

tn =

Columns 1 through 13

	0	0.0010	0.0020	0.0030	0.0040	
0.0050	0.0060	0.0070	0.0080	0.0090	0.0100	
0.0110	0.0120					

Columns 14 through 26

	0.0130	0.0140	0.0150	0.0160	0.0170	
0.0180	0.0190	0.0200	0.0210	0.0220	0.0230	
0.0240	0.0250					

Columns 27 through 39

	0.0260	0.0270	0.0280	0.0290	0.0300	
0.0310	0.0320	0.0330	0.0340	0.0350	0.0360	
0.0370	0.0380					

Columns 40 through 52

	0.0390	0.0400	0.0410	0.0420	0.0430	
0.0440	0.0450	0.0460	0.0470	0.0480	0.0490	
0.0500	0.0510					

Columns 53 through 65

	0.0520	0.0530	0.0540	0.0550	0.0560	
0.0570	0.0580	0.0590	0.0600	0.0610	0.0620	
0.0630	0.0640					

Columns 66 through 78

	0.0650	0.0660	0.0670	0.0680	0.0690	
0.0700	0.0710	0.0720	0.0730	0.0740	0.0750	
0.0760	0.0770					

Columns 79 through 91

	0.0780	0.0790	0.0800	0.0810	0.0820	
0.0830	0.0840	0.0850	0.0860	0.0870	0.0880	
0.0890	0.0900					

Columns 92 through 104

	0.0910	0.0920	0.0930	0.0940	0.0950	
0.0960	0.0970	0.0980	0.0990	0.1000	0.1010	
0.1020	0.1030					

Columns 105 through 117

	0.1040	0.1050	0.1060	0.1070	0.1080	
0.1090	0.1100	0.1110	0.1120	0.1130	0.1140	
0.1150	0.1160					

Columns 118 through 130

0.1170 0.1180 0.1190 0.1200 0.1210
0.1220 0.1230 0.1240 0.1250 0.1260 0.1270
0.1280 0.1290

Columns 131 through 143

0.1300 0.1310 0.1320 0.1330 0.1340
0.1350 0.1360 0.1370 0.1380 0.1390 0.1400
0.1410 0.1420

Columns 144 through 156

0.1430 0.1440 0.1450 0.1460 0.1470
0.1480 0.1490 0.1500 0.1510 0.1520 0.1530
0.1540 0.1550

Columns 157 through 169

0.1560 0.1570 0.1580 0.1590 0.1600
0.1610 0.1620 0.1630 0.1640 0.1650 0.1660
0.1670 0.1680

Columns 170 through 182

0.1690 0.1700 0.1710 0.1720 0.1730
0.1740 0.1750 0.1760 0.1770 0.1780 0.1790
0.1800 0.1810

Columns 183 through 195

0.1820 0.1830 0.1840 0.1850 0.1860
0.1870 0.1880 0.1890 0.1900 0.1910 0.1920
0.1930 0.1940

Columns 196 through 208

0.1950 0.1960 0.1970 0.1980 0.1990
0.2000 0.2010 0.2020 0.2030 0.2040 0.2050
0.2060 0.2070

Columns 209 through 221

0.2080 0.2090 0.2100 0.2110 0.2120
0.2130 0.2140 0.2150 0.2160 0.2170 0.2180
0.2190 0.2200

Columns 222 through 234

0.2210 0.2220 0.2230 0.2240 0.2250
0.2260 0.2270 0.2280 0.2290 0.2300 0.2310
0.2320 0.2330

Columns 235 through 247

0.2340 0.2350 0.2360 0.2370 0.2380
0.2390 0.2400 0.2410 0.2420 0.2430 0.2440
0.2450 0.2460

Columns 248 through 251

0.2470 0.2480 0.2490 0.2500

v =

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

vkm =

$$(51*\cos((17*t)/20)*\exp(-(3*t)/4))/40000 - (9*\sin((17*t)/20)*\exp(-(3*t)/4))/8000 + 3/8000$$

a =

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

akm =

$$- (153*\cos((17*t)/20)*\exp(-(3*t)/4))/80000 - (3*\sin((17*t)/20)*\exp(-(3*t)/4))/12500$$

vn =

$$\begin{aligned} & [33/20000, (51*\cos(17/20000)*\exp(-3/4000))/40000 - \\ & (9*\exp(-3/4000)*\sin(17/20000))/8000 + 3/8000, \\ & (51*\cos(17/10000)*\exp(-3/2000))/40000 - (9*\exp(- \\ & 3/2000)*\sin(17/10000))/8000 + 3/8000, \\ & (51*\cos(51/20000)*\exp(-9/4000))/40000 - (9*\exp(- \\ & 9/4000)*\sin(51/20000))/8000 + 3/8000, \\ & (51*\cos(17/5000)*\exp(-3/1000))/40000 - (9*\exp(- \\ & 3/1000)*\sin(17/5000))/8000 + 3/8000, \\ & (51*\cos(17/4000)*\exp(-3/800))/40000 - (9*\exp(- \\ & 3/800)*\sin(17/4000))/8000 + 3/8000, \\ & (51*\cos(51/10000)*\exp(-9/2000))/40000 - (9*\exp(- \\ & 9/2000)*\sin(51/10000))/8000 + 3/8000, \\ & (51*\cos(119/20000)*\exp(-21/4000))/40000 - (9*\exp(- \\ & 21/4000)*\sin(119/20000))/8000 + 3/8000, \\ & (51*\cos(17/2500)*\exp(-3/500))/40000 - (9*\exp(- \\ & 3/500)*\sin(17/2500))/8000 + 3/8000, \\ & (51*\cos(153/20000)*\exp(-27/4000))/40000 - (9*\exp(- \\ & 27/4000)*\sin(153/20000))/8000 + 3/8000, \\ & (51*\cos(17/2000)*\exp(-3/400))/40000 - (9*\exp(- \\ & 3/400)*\sin(17/2000))/8000 + 3/8000, \\ & (51*\cos(187/20000)*\exp(-33/4000))/40000 - (9*\exp(- \\ & 33/4000)*\sin(187/20000))/8000 + 3/8000, \\ & (51*\cos(51/5000)*\exp(-9/1000))/40000 - (9*\exp(- \\ & 9/1000)*\sin(51/5000))/8000 + 3/8000, \\ & (51*\cos(221/20000)*\exp(-39/4000))/40000 - (9*\exp(- \\ & 39/4000)*\sin(221/20000))/8000 + 3/8000, \\ & (51*\cos(119/10000)*\exp(-21/2000))/40000 - (9*\exp(- \end{aligned}$$

$21/2000) * \sin(119/10000) / 8000 + 3/8000,$
 $(51 * \cos(51/4000) * \exp(-9/800)) / 40000 - (9 * \exp(-$
 $9/800) * \sin(51/4000) / 8000 + 3/8000,$
 $(51 * \cos(17/1250) * \exp(-3/250)) / 40000 - (9 * \exp(-$
 $3/250) * \sin(17/1250) / 8000 + 3/8000,$
 $(51 * \cos(289/20000) * \exp(-51/4000)) / 40000 - (9 * \exp(-$
 $51/4000) * \sin(289/20000) / 8000 + 3/8000,$
 $(51 * \cos(153/10000) * \exp(-27/2000)) / 40000 - (9 * \exp(-$
 $27/2000) * \sin(153/10000) / 8000 + 3/8000,$
 $(51 * \cos(323/20000) * \exp(-57/4000)) / 40000 - (9 * \exp(-$
 $57/4000) * \sin(323/20000) / 8000 + 3/8000,$
 $(51 * \cos(17/1000) * \exp(-3/200)) / 40000 - (9 * \exp(-$
 $3/200) * \sin(17/1000) / 8000 + 3/8000,$
 $(51 * \cos(357/20000) * \exp(-63/4000)) / 40000 - (9 * \exp(-$
 $63/4000) * \sin(357/20000) / 8000 + 3/8000,$
 $(51 * \cos(187/10000) * \exp(-33/2000)) / 40000 - (9 * \exp(-$
 $33/2000) * \sin(187/10000) / 8000 + 3/8000,$
 $(51 * \cos(391/20000) * \exp(-69/4000)) / 40000 - (9 * \exp(-$
 $69/4000) * \sin(391/20000) / 8000 + 3/8000,$
 $(51 * \cos(51/2500) * \exp(-9/500)) / 40000 - (9 * \exp(-$
 $9/500) * \sin(51/2500) / 8000 + 3/8000, (51 * \cos(17/800) * \exp(-$
 $3/160)) / 40000 - (9 * \exp(-3/160) * \sin(17/800) / 8000 +$
 $3/8000, (51 * \cos(221/10000) * \exp(-39/2000)) / 40000 -$
 $(9 * \exp(-39/2000) * \sin(221/10000) / 8000 + 3/8000,$
 $(51 * \cos(459/20000) * \exp(-81/4000)) / 40000 - (9 * \exp(-$
 $81/4000) * \sin(459/20000) / 8000 + 3/8000,$
 $(51 * \cos(119/5000) * \exp(-21/1000)) / 40000 - (9 * \exp(-$
 $21/1000) * \sin(119/5000) / 8000 + 3/8000,$
 $(51 * \cos(493/20000) * \exp(-87/4000)) / 40000 - (9 * \exp(-$
 $87/4000) * \sin(493/20000) / 8000 + 3/8000,$
 $(51 * \cos(51/2000) * \exp(-9/400)) / 40000 - (9 * \exp(-$
 $9/400) * \sin(51/2000) / 8000 + 3/8000,$
 $(51 * \cos(527/20000) * \exp(-93/4000)) / 40000 - (9 * \exp(-$
 $93/4000) * \sin(527/20000) / 8000 + 3/8000,$
 $(51 * \cos(17/625) * \exp(-3/125)) / 40000 - (9 * \exp(-$
 $3/125) * \sin(17/625) / 8000 + 3/8000,$
 $(51 * \cos(561/20000) * \exp(-99/4000)) / 40000 - (9 * \exp(-$
 $99/4000) * \sin(561/20000) / 8000 + 3/8000,$
 $(51 * \cos(289/10000) * \exp(-51/2000)) / 40000 - (9 * \exp(-$
 $51/2000) * \sin(289/10000) / 8000 + 3/8000,$
 $(51 * \cos(119/4000) * \exp(-21/800)) / 40000 - (9 * \exp(-$
 $21/800) * \sin(119/4000) / 8000 + 3/8000,$
 $(51 * \cos(153/5000) * \exp(-27/1000)) / 40000 - (9 * \exp(-$
 $27/1000) * \sin(153/5000) / 8000 + 3/8000,$
 $(51 * \cos(629/20000) * \exp(-111/4000)) / 40000 - (9 * \exp(-$
 $111/4000) * \sin(629/20000) / 8000 + 3/8000,$
 $(51 * \cos(323/10000) * \exp(-57/2000)) / 40000 - (9 * \exp(-$
 $57/2000) * \sin(323/10000) / 8000 + 3/8000,$
 $(51 * \cos(663/20000) * \exp(-117/4000)) / 40000 - (9 * \exp(-$
 $117/4000) * \sin(663/20000) / 8000 + 3/8000,$
 $(51 * \cos(17/500) * \exp(-3/100)) / 40000 - (9 * \exp(-$
 $3/100) * \sin(17/500) / 8000 + 3/8000,$
 $(51 * \cos(697/20000) * \exp(-123/4000)) / 40000 - (9 * \exp(-$
 $123/4000) * \sin(697/20000) / 8000 + 3/8000,$
 $(51 * \cos(357/10000) * \exp(-63/2000)) / 40000 - (9 * \exp(-$
 $63/2000) * \sin(357/10000) / 8000 + 3/8000,$
 $(51 * \cos(731/20000) * \exp(-129/4000)) / 40000 - (9 * \exp(-$
 $129/4000) * \sin(731/20000) / 8000 + 3/8000,$

(51*cos(187/5000)*exp(-33/1000))/40000 - (9*exp(-33/1000)*sin(187/5000))/8000 + 3/8000,
(51*cos(153/4000)*exp(-27/800))/40000 - (9*exp(-27/800)*sin(153/4000))/8000 + 3/8000,
(51*cos(391/10000)*exp(-69/2000))/40000 - (9*exp(-69/2000)*sin(391/10000))/8000 + 3/8000,
(51*cos(799/20000)*exp(-141/4000))/40000 - (9*exp(-141/4000)*sin(799/20000))/8000 + 3/8000,
(51*cos(51/1250)*exp(-9/250))/40000 - (9*exp(-9/250)*sin(51/1250))/8000 + 3/8000,
(51*cos(833/20000)*exp(-147/4000))/40000 - (9*exp(-147/4000)*sin(833/20000))/8000 + 3/8000,
(51*cos(17/400)*exp(-3/80))/40000 - (9*exp(-3/80)*sin(17/400))/8000 + 3/8000,
(51*cos(867/20000)*exp(-153/4000))/40000 - (9*exp(-153/4000)*sin(867/20000))/8000 + 3/8000,
(51*cos(221/5000)*exp(-39/1000))/40000 - (9*exp(-39/1000)*sin(221/5000))/8000 + 3/8000,
(51*cos(901/20000)*exp(-159/4000))/40000 - (9*exp(-159/4000)*sin(901/20000))/8000 + 3/8000,
(51*cos(459/10000)*exp(-81/2000))/40000 - (9*exp(-81/2000)*sin(459/10000))/8000 + 3/8000,
(51*cos(187/4000)*exp(-33/800))/40000 - (9*exp(-33/800)*sin(187/4000))/8000 + 3/8000,
(51*cos(119/2500)*exp(-21/500))/40000 - (9*exp(-21/500)*sin(119/2500))/8000 + 3/8000,
(51*cos(969/20000)*exp(-171/4000))/40000 - (9*exp(-171/4000)*sin(969/20000))/8000 + 3/8000,
(51*cos(493/10000)*exp(-87/2000))/40000 - (9*exp(-87/2000)*sin(493/10000))/8000 + 3/8000,
(51*cos(1003/20000)*exp(-177/4000))/40000 - (9*exp(-177/4000)*sin(1003/20000))/8000 + 3/8000,
(51*cos(51/1000)*exp(-9/200))/40000 - (9*exp(-9/200)*sin(51/1000))/8000 + 3/8000,
(51*cos(1037/20000)*exp(-183/4000))/40000 - (9*exp(-183/4000)*sin(1037/20000))/8000 + 3/8000,
(51*cos(527/10000)*exp(-93/2000))/40000 - (9*exp(-93/2000)*sin(527/10000))/8000 + 3/8000,
(51*cos(1071/20000)*exp(-189/4000))/40000 - (9*exp(-189/4000)*sin(1071/20000))/8000 + 3/8000,
(51*cos(34/625)*exp(-6/125))/40000 - (9*exp(-6/125)*sin(34/625))/8000 + 3/8000,
(51*cos(221/4000)*exp(-39/800))/40000 - (9*exp(-39/800)*sin(221/4000))/8000 + 3/8000,
(51*cos(561/10000)*exp(-99/2000))/40000 - (9*exp(-99/2000)*sin(561/10000))/8000 + 3/8000,
(51*cos(1139/20000)*exp(-201/4000))/40000 - (9*exp(-201/4000)*sin(1139/20000))/8000 + 3/8000,
(51*cos(289/5000)*exp(-51/1000))/40000 - (9*exp(-51/1000)*sin(289/5000))/8000 + 3/8000,
(51*cos(1173/20000)*exp(-207/4000))/40000 - (9*exp(-207/4000)*sin(1173/20000))/8000 + 3/8000,
(51*cos(119/2000)*exp(-21/400))/40000 - (9*exp(-21/400)*sin(119/2000))/8000 + 3/8000,
(51*cos(1207/20000)*exp(-213/4000))/40000 - (9*exp(-213/4000)*sin(1207/20000))/8000 + 3/8000,
(51*cos(153/2500)*exp(-27/500))/40000 - (9*exp(-27/500)*sin(153/2500))/8000 + 3/8000,

(51*cos(1241/20000)*exp(-219/4000))/40000 - (9*exp(-219/4000)*sin(1241/20000))/8000 + 3/8000,
(51*cos(629/10000)*exp(-111/2000))/40000 - (9*exp(-111/2000)*sin(629/10000))/8000 + 3/8000,
(51*cos(51/800)*exp(-9/160))/40000 - (9*exp(-9/160)*sin(51/800))/8000 + 3/8000,
(51*cos(323/5000)*exp(-57/1000))/40000 - (9*exp(-57/1000)*sin(323/5000))/8000 + 3/8000,
(51*cos(1309/20000)*exp(-231/4000))/40000 - (9*exp(-231/4000)*sin(1309/20000))/8000 + 3/8000,
(51*cos(663/10000)*exp(-117/2000))/40000 - (9*exp(-117/2000)*sin(663/10000))/8000 + 3/8000,
(51*cos(1343/20000)*exp(-237/4000))/40000 - (9*exp(-237/4000)*sin(1343/20000))/8000 + 3/8000,
(51*cos(17/250)*exp(-3/50))/40000 - (9*exp(-3/50)*sin(17/250))/8000 + 3/8000,
(51*cos(1377/20000)*exp(-243/4000))/40000 - (9*exp(-243/4000)*sin(1377/20000))/8000 + 3/8000,
(51*cos(697/10000)*exp(-123/2000))/40000 - (9*exp(-123/2000)*sin(697/10000))/8000 + 3/8000,
(51*cos(1411/20000)*exp(-249/4000))/40000 - (9*exp(-249/4000)*sin(1411/20000))/8000 + 3/8000,
(51*cos(357/5000)*exp(-63/1000))/40000 - (9*exp(-63/1000)*sin(357/5000))/8000 + 3/8000,
(51*cos(289/4000)*exp(-51/800))/40000 - (9*exp(-51/800)*sin(289/4000))/8000 + 3/8000,
(51*cos(731/10000)*exp(-129/2000))/40000 - (9*exp(-129/2000)*sin(731/10000))/8000 + 3/8000,
(51*cos(1479/20000)*exp(-261/4000))/40000 - (9*exp(-261/4000)*sin(1479/20000))/8000 + 3/8000,
(51*cos(187/2500)*exp(-33/500))/40000 - (9*exp(-33/500)*sin(187/2500))/8000 + 3/8000,
(51*cos(1513/20000)*exp(-267/4000))/40000 - (9*exp(-267/4000)*sin(1513/20000))/8000 + 3/8000,
(51*cos(153/2000)*exp(-27/400))/40000 - (9*exp(-27/400)*sin(153/2000))/8000 + 3/8000,
(51*cos(1547/20000)*exp(-273/4000))/40000 - (9*exp(-273/4000)*sin(1547/20000))/8000 + 3/8000,
(51*cos(391/5000)*exp(-69/1000))/40000 - (9*exp(-69/1000)*sin(391/5000))/8000 + 3/8000,
(51*cos(1581/20000)*exp(-279/4000))/40000 - (9*exp(-279/4000)*sin(1581/20000))/8000 + 3/8000,
(51*cos(799/10000)*exp(-141/2000))/40000 - (9*exp(-141/2000)*sin(799/10000))/8000 + 3/8000,
(51*cos(323/4000)*exp(-57/800))/40000 - (9*exp(-57/800)*sin(323/4000))/8000 + 3/8000,
(51*cos(51/625)*exp(-9/125))/40000 - (9*exp(-9/125)*sin(51/625))/8000 + 3/8000,
(51*cos(1649/20000)*exp(-291/4000))/40000 - (9*exp(-291/4000)*sin(1649/20000))/8000 + 3/8000,
(51*cos(833/10000)*exp(-147/2000))/40000 - (9*exp(-147/2000)*sin(833/10000))/8000 + 3/8000,
(51*cos(1683/20000)*exp(-297/4000))/40000 - (9*exp(-297/4000)*sin(1683/20000))/8000 + 3/8000,
(51*cos(17/200)*exp(-3/40))/40000 - (9*exp(-3/40)*sin(17/200))/8000 + 3/8000,
(51*cos(1717/20000)*exp(-303/4000))/40000 - (9*exp(-303/4000)*sin(1717/20000))/8000 + 3/8000,

$(51 \cos(867/10000) \exp(-153/2000))/40000 - (9 \exp(-153/2000) \sin(867/10000))/8000 + 3/8000,$
 $(51 \cos(1751/20000) \exp(-309/4000))/40000 - (9 \exp(-309/4000) \sin(1751/20000))/8000 + 3/8000,$
 $(51 \cos(221/2500) \exp(-39/500))/40000 - (9 \exp(-39/500) \sin(221/2500))/8000 + 3/8000,$
 $(51 \cos(357/4000) \exp(-63/800))/40000 - (9 \exp(-63/800) \sin(357/4000))/8000 + 3/8000,$
 $(51 \cos(901/10000) \exp(-159/2000))/40000 - (9 \exp(-159/2000) \sin(901/10000))/8000 + 3/8000,$
 $(51 \cos(1819/20000) \exp(-321/4000))/40000 - (9 \exp(-321/4000) \sin(1819/20000))/8000 + 3/8000,$
 $(51 \cos(459/5000) \exp(-81/1000))/40000 - (9 \exp(-81/1000) \sin(459/5000))/8000 + 3/8000,$
 $(51 \cos(1853/20000) \exp(-327/4000))/40000 - (9 \exp(-327/4000) \sin(1853/20000))/8000 + 3/8000,$
 $(51 \cos(187/2000) \exp(-33/400))/40000 - (9 \exp(-33/400) \sin(187/2000))/8000 + 3/8000,$
 $(51 \cos(1887/20000) \exp(-333/4000))/40000 - (9 \exp(-333/4000) \sin(1887/20000))/8000 + 3/8000,$
 $(51 \cos(119/1250) \exp(-21/250))/40000 - (9 \exp(-21/250) \sin(119/1250))/8000 + 3/8000,$
 $(51 \cos(1921/20000) \exp(-339/4000))/40000 - (9 \exp(-339/4000) \sin(1921/20000))/8000 + 3/8000,$
 $(51 \cos(969/10000) \exp(-171/2000))/40000 - (9 \exp(-171/2000) \sin(969/10000))/8000 + 3/8000,$
 $(51 \cos(391/4000) \exp(-69/800))/40000 - (9 \exp(-69/800) \sin(391/4000))/8000 + 3/8000,$
 $(51 \cos(493/5000) \exp(-87/1000))/40000 - (9 \exp(-87/1000) \sin(493/5000))/8000 + 3/8000,$
 $(51 \cos(1989/20000) \exp(-351/4000))/40000 - (9 \exp(-351/4000) \sin(1989/20000))/8000 + 3/8000,$
 $(51 \cos(1003/10000) \exp(-177/2000))/40000 - (9 \exp(-177/2000) \sin(1003/10000))/8000 + 3/8000,$
 $(51 \cos(2023/20000) \exp(-357/4000))/40000 - (9 \exp(-357/4000) \sin(2023/20000))/8000 + 3/8000,$
 $(51 \cos(51/500) \exp(-9/100))/40000 - (9 \exp(-9/100) \sin(51/500))/8000 + 3/8000,$
 $(51 \cos(2057/20000) \exp(-363/4000))/40000 - (9 \exp(-363/4000) \sin(2057/20000))/8000 + 3/8000,$
 $(51 \cos(1037/10000) \exp(-183/2000))/40000 - (9 \exp(-183/2000) \sin(1037/10000))/8000 + 3/8000,$
 $(51 \cos(2091/20000) \exp(-369/4000))/40000 - (9 \exp(-369/4000) \sin(2091/20000))/8000 + 3/8000,$
 $(51 \cos(527/5000) \exp(-93/1000))/40000 - (9 \exp(-93/1000) \sin(527/5000))/8000 + 3/8000,$
 $(51 \cos(17/160) \exp(-3/32))/40000 - (9 \exp(-3/32) \sin(17/160))/8000 + 3/8000,$
 $(51 \cos(1071/10000) \exp(-189/2000))/40000 - (9 \exp(-189/2000) \sin(1071/10000))/8000 + 3/8000,$
 $(51 \cos(2159/20000) \exp(-381/4000))/40000 - (9 \exp(-381/4000) \sin(2159/20000))/8000 + 3/8000,$
 $(51 \cos(68/625) \exp(-12/125))/40000 - (9 \exp(-12/125) \sin(68/625))/8000 + 3/8000,$
 $(51 \cos(2193/20000) \exp(-387/4000))/40000 - (9 \exp(-387/4000) \sin(2193/20000))/8000 + 3/8000,$
 $(51 \cos(221/2000) \exp(-39/400))/40000 - (9 \exp(-39/400) \sin(221/2000))/8000 + 3/8000,$

(51*cos(2227/20000)*exp(-393/4000))/40000 - (9*exp(-393/4000)*sin(2227/20000))/8000 + 3/8000,
(51*cos(561/5000)*exp(-99/1000))/40000 - (9*exp(-99/1000)*sin(561/5000))/8000 + 3/8000,
(51*cos(2261/20000)*exp(-399/4000))/40000 - (9*exp(-399/4000)*sin(2261/20000))/8000 + 3/8000,
(51*cos(1139/10000)*exp(-201/2000))/40000 - (9*exp(-201/2000)*sin(1139/10000))/8000 + 3/8000,
(51*cos(459/4000)*exp(-81/800))/40000 - (9*exp(-81/800)*sin(459/4000))/8000 + 3/8000,
(51*cos(289/2500)*exp(-51/500))/40000 - (9*exp(-51/500)*sin(289/2500))/8000 + 3/8000,
(51*cos(2329/20000)*exp(-411/4000))/40000 - (9*exp(-411/4000)*sin(2329/20000))/8000 + 3/8000,
(51*cos(1173/10000)*exp(-207/2000))/40000 - (9*exp(-207/2000)*sin(1173/10000))/8000 + 3/8000,
(51*cos(2363/20000)*exp(-417/4000))/40000 - (9*exp(-417/4000)*sin(2363/20000))/8000 + 3/8000,
(51*cos(119/1000)*exp(-21/200))/40000 - (9*exp(-21/200)*sin(119/1000))/8000 + 3/8000,
(51*cos(2397/20000)*exp(-423/4000))/40000 - (9*exp(-423/4000)*sin(2397/20000))/8000 + 3/8000,
(51*cos(1207/10000)*exp(-213/2000))/40000 - (9*exp(-213/2000)*sin(1207/10000))/8000 + 3/8000,
(51*cos(2431/20000)*exp(-429/4000))/40000 - (9*exp(-429/4000)*sin(2431/20000))/8000 + 3/8000,
(51*cos(153/1250)*exp(-27/250))/40000 - (9*exp(-27/250)*sin(153/1250))/8000 + 3/8000,
(51*cos(493/4000)*exp(-87/800))/40000 - (9*exp(-87/800)*sin(493/4000))/8000 + 3/8000,
(51*cos(1241/10000)*exp(-219/2000))/40000 - (9*exp(-219/2000)*sin(1241/10000))/8000 + 3/8000,
(51*cos(2499/20000)*exp(-441/4000))/40000 - (9*exp(-441/4000)*sin(2499/20000))/8000 + 3/8000,
(51*cos(629/5000)*exp(-111/1000))/40000 - (9*exp(-111/1000)*sin(629/5000))/8000 + 3/8000,
(51*cos(2533/20000)*exp(-447/4000))/40000 - (9*exp(-447/4000)*sin(2533/20000))/8000 + 3/8000,
(51*cos(51/400)*exp(-9/80))/40000 - (9*exp(-9/80)*sin(51/400))/8000 + 3/8000,
(51*cos(2567/20000)*exp(-453/4000))/40000 - (9*exp(-453/4000)*sin(2567/20000))/8000 + 3/8000,
(51*cos(323/2500)*exp(-57/500))/40000 - (9*exp(-57/500)*sin(323/2500))/8000 + 3/8000,
(51*cos(2601/20000)*exp(-459/4000))/40000 - (9*exp(-459/4000)*sin(2601/20000))/8000 + 3/8000,
(51*cos(1309/10000)*exp(-231/2000))/40000 - (9*exp(-231/2000)*sin(1309/10000))/8000 + 3/8000,
(51*cos(527/4000)*exp(-93/800))/40000 - (9*exp(-93/800)*sin(527/4000))/8000 + 3/8000,
(51*cos(663/5000)*exp(-117/1000))/40000 - (9*exp(-117/1000)*sin(663/5000))/8000 + 3/8000,
(51*cos(2669/20000)*exp(-471/4000))/40000 - (9*exp(-471/4000)*sin(2669/20000))/8000 + 3/8000,
(51*cos(1343/10000)*exp(-237/2000))/40000 - (9*exp(-237/2000)*sin(1343/10000))/8000 + 3/8000,
(51*cos(2703/20000)*exp(-477/4000))/40000 - (9*exp(-477/4000)*sin(2703/20000))/8000 + 3/8000,

(51*cos(17/125)*exp(-3/25))/40000 - (9*exp(-3/25)*sin(17/125))/8000 + 3/8000,
(51*cos(2737/20000)*exp(-483/4000))/40000 - (9*exp(-483/4000)*sin(2737/20000))/8000 + 3/8000,
(51*cos(1377/10000)*exp(-243/2000))/40000 - (9*exp(-243/2000)*sin(1377/10000))/8000 + 3/8000,
(51*cos(2771/20000)*exp(-489/4000))/40000 - (9*exp(-489/4000)*sin(2771/20000))/8000 + 3/8000,
(51*cos(697/5000)*exp(-123/1000))/40000 - (9*exp(-123/1000)*sin(697/5000))/8000 + 3/8000,
(51*cos(561/4000)*exp(-99/800))/40000 - (9*exp(-99/800)*sin(561/4000))/8000 + 3/8000,
(51*cos(1411/10000)*exp(-249/2000))/40000 - (9*exp(-249/2000)*sin(1411/10000))/8000 + 3/8000,
(51*cos(2839/20000)*exp(-501/4000))/40000 - (9*exp(-501/4000)*sin(2839/20000))/8000 + 3/8000,
(51*cos(357/2500)*exp(-63/500))/40000 - (9*exp(-63/500)*sin(357/2500))/8000 + 3/8000,
(51*cos(2873/20000)*exp(-507/4000))/40000 - (9*exp(-507/4000)*sin(2873/20000))/8000 + 3/8000,
(51*cos(289/2000)*exp(-51/400))/40000 - (9*exp(-51/400)*sin(289/2000))/8000 + 3/8000,
(51*cos(2907/20000)*exp(-513/4000))/40000 - (9*exp(-513/4000)*sin(2907/20000))/8000 + 3/8000,
(51*cos(731/5000)*exp(-129/1000))/40000 - (9*exp(-129/1000)*sin(731/5000))/8000 + 3/8000,
(51*cos(2941/20000)*exp(-519/4000))/40000 - (9*exp(-519/4000)*sin(2941/20000))/8000 + 3/8000,
(51*cos(1479/10000)*exp(-261/2000))/40000 - (9*exp(-261/2000)*sin(1479/10000))/8000 + 3/8000,
(51*cos(119/800)*exp(-21/160))/40000 - (9*exp(-21/160)*sin(119/800))/8000 + 3/8000,
(51*cos(187/1250)*exp(-33/250))/40000 - (9*exp(-33/250)*sin(187/1250))/8000 + 3/8000,
(51*cos(3009/20000)*exp(-531/4000))/40000 - (9*exp(-531/4000)*sin(3009/20000))/8000 + 3/8000,
(51*cos(1513/10000)*exp(-267/2000))/40000 - (9*exp(-267/2000)*sin(1513/10000))/8000 + 3/8000,
(51*cos(3043/20000)*exp(-537/4000))/40000 - (9*exp(-537/4000)*sin(3043/20000))/8000 + 3/8000,
(51*cos(153/1000)*exp(-27/200))/40000 - (9*exp(-27/200)*sin(153/1000))/8000 + 3/8000,
(51*cos(3077/20000)*exp(-543/4000))/40000 - (9*exp(-543/4000)*sin(3077/20000))/8000 + 3/8000,
(51*cos(1547/10000)*exp(-273/2000))/40000 - (9*exp(-273/2000)*sin(1547/10000))/8000 + 3/8000,
(51*cos(3111/20000)*exp(-549/4000))/40000 - (9*exp(-549/4000)*sin(3111/20000))/8000 + 3/8000,
(51*cos(391/2500)*exp(-69/500))/40000 - (9*exp(-69/500)*sin(391/2500))/8000 + 3/8000,
(51*cos(629/4000)*exp(-111/800))/40000 - (9*exp(-111/800)*sin(629/4000))/8000 + 3/8000,
(51*cos(1581/10000)*exp(-279/2000))/40000 - (9*exp(-279/2000)*sin(1581/10000))/8000 + 3/8000,
(51*cos(3179/20000)*exp(-561/4000))/40000 - (9*exp(-561/4000)*sin(3179/20000))/8000 + 3/8000,
(51*cos(799/5000)*exp(-141/1000))/40000 - (9*exp(-141/1000)*sin(799/5000))/8000 + 3/8000,

$(51 \cdot \cos(3213/20000) \cdot \exp(-567/4000))/40000 - (9 \cdot \exp(-567/4000) \cdot \sin(3213/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(323/2000) \cdot \exp(-57/400))/40000 - (9 \cdot \exp(-57/400) \cdot \sin(323/2000))/8000 + 3/8000,$
 $(51 \cdot \cos(3247/20000) \cdot \exp(-573/4000))/40000 - (9 \cdot \exp(-573/4000) \cdot \sin(3247/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(102/625) \cdot \exp(-18/125))/40000 - (9 \cdot \exp(-18/125) \cdot \sin(102/625))/8000 + 3/8000,$
 $(51 \cdot \cos(3281/20000) \cdot \exp(-579/4000))/40000 - (9 \cdot \exp(-579/4000) \cdot \sin(3281/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(1649/10000) \cdot \exp(-291/2000))/40000 - (9 \cdot \exp(-291/2000) \cdot \sin(1649/10000))/8000 + 3/8000,$
 $(51 \cdot \cos(663/4000) \cdot \exp(-117/800))/40000 - (9 \cdot \exp(-117/800) \cdot \sin(663/4000))/8000 + 3/8000,$
 $(51 \cdot \cos(833/5000) \cdot \exp(-147/1000))/40000 - (9 \cdot \exp(-147/1000) \cdot \sin(833/5000))/8000 + 3/8000,$
 $(51 \cdot \cos(3349/20000) \cdot \exp(-591/4000))/40000 - (9 \cdot \exp(-591/4000) \cdot \sin(3349/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(1683/10000) \cdot \exp(-297/2000))/40000 - (9 \cdot \exp(-297/2000) \cdot \sin(1683/10000))/8000 + 3/8000,$
 $(51 \cdot \cos(3383/20000) \cdot \exp(-597/4000))/40000 - (9 \cdot \exp(-597/4000) \cdot \sin(3383/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(17/100) \cdot \exp(-3/20))/40000 - (9 \cdot \exp(-3/20) \cdot \sin(17/100))/8000 + 3/8000,$
 $(51 \cdot \cos(3417/20000) \cdot \exp(-603/4000))/40000 - (9 \cdot \exp(-603/4000) \cdot \sin(3417/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(1717/10000) \cdot \exp(-303/2000))/40000 - (9 \cdot \exp(-303/2000) \cdot \sin(1717/10000))/8000 + 3/8000,$
 $(51 \cdot \cos(3451/20000) \cdot \exp(-609/4000))/40000 - (9 \cdot \exp(-609/4000) \cdot \sin(3451/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(867/5000) \cdot \exp(-153/1000))/40000 - (9 \cdot \exp(-153/1000) \cdot \sin(867/5000))/8000 + 3/8000,$
 $(51 \cdot \cos(697/4000) \cdot \exp(-123/800))/40000 - (9 \cdot \exp(-123/800) \cdot \sin(697/4000))/8000 + 3/8000,$
 $(51 \cdot \cos(1751/10000) \cdot \exp(-309/2000))/40000 - (9 \cdot \exp(-309/2000) \cdot \sin(1751/10000))/8000 + 3/8000,$
 $(51 \cdot \cos(3519/20000) \cdot \exp(-621/4000))/40000 - (9 \cdot \exp(-621/4000) \cdot \sin(3519/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(221/1250) \cdot \exp(-39/250))/40000 - (9 \cdot \exp(-39/250) \cdot \sin(221/1250))/8000 + 3/8000,$
 $(51 \cdot \cos(3553/20000) \cdot \exp(-627/4000))/40000 - (9 \cdot \exp(-627/4000) \cdot \sin(3553/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(357/2000) \cdot \exp(-63/400))/40000 - (9 \cdot \exp(-63/400) \cdot \sin(357/2000))/8000 + 3/8000,$
 $(51 \cdot \cos(3587/20000) \cdot \exp(-633/4000))/40000 - (9 \cdot \exp(-633/4000) \cdot \sin(3587/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(901/5000) \cdot \exp(-159/1000))/40000 - (9 \cdot \exp(-159/1000) \cdot \sin(901/5000))/8000 + 3/8000,$
 $(51 \cdot \cos(3621/20000) \cdot \exp(-639/4000))/40000 - (9 \cdot \exp(-639/4000) \cdot \sin(3621/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(1819/10000) \cdot \exp(-321/2000))/40000 - (9 \cdot \exp(-321/2000) \cdot \sin(1819/10000))/8000 + 3/8000,$
 $(51 \cdot \cos(731/4000) \cdot \exp(-129/800))/40000 - (9 \cdot \exp(-129/800) \cdot \sin(731/4000))/8000 + 3/8000,$
 $(51 \cdot \cos(459/2500) \cdot \exp(-81/500))/40000 - (9 \cdot \exp(-81/500) \cdot \sin(459/2500))/8000 + 3/8000,$
 $(51 \cdot \cos(3689/20000) \cdot \exp(-651/4000))/40000 - (9 \cdot \exp(-651/4000) \cdot \sin(3689/20000))/8000 + 3/8000,$

$(51 \cos(1853/10000) \exp(-327/2000))/40000 - (9 \exp(-327/2000) \sin(1853/10000))/8000 + 3/8000,$
 $(51 \cos(3723/20000) \exp(-657/4000))/40000 - (9 \exp(-657/4000) \sin(3723/20000))/8000 + 3/8000,$
 $(51 \cos(187/1000) \exp(-33/200))/40000 - (9 \exp(-33/200) \sin(187/1000))/8000 + 3/8000,$
 $(51 \cos(3757/20000) \exp(-663/4000))/40000 - (9 \exp(-663/4000) \sin(3757/20000))/8000 + 3/8000,$
 $(51 \cos(1887/10000) \exp(-333/2000))/40000 - (9 \exp(-333/2000) \sin(1887/10000))/8000 + 3/8000,$
 $(51 \cos(3791/20000) \exp(-669/4000))/40000 - (9 \exp(-669/4000) \sin(3791/20000))/8000 + 3/8000,$
 $(51 \cos(119/625) \exp(-21/125))/40000 - (9 \exp(-21/125) \sin(119/625))/8000 + 3/8000,$
 $(51 \cos(153/800) \exp(-27/160))/40000 - (9 \exp(-27/160) \sin(153/800))/8000 + 3/8000,$
 $(51 \cos(1921/10000) \exp(-339/2000))/40000 - (9 \exp(-339/2000) \sin(1921/10000))/8000 + 3/8000,$
 $(51 \cos(3859/20000) \exp(-681/4000))/40000 - (9 \exp(-681/4000) \sin(3859/20000))/8000 + 3/8000,$
 $(51 \cos(969/5000) \exp(-171/1000))/40000 - (9 \exp(-171/1000) \sin(969/5000))/8000 + 3/8000,$
 $(51 \cos(3893/20000) \exp(-687/4000))/40000 - (9 \exp(-687/4000) \sin(3893/20000))/8000 + 3/8000,$
 $(51 \cos(391/2000) \exp(-69/400))/40000 - (9 \exp(-69/400) \sin(391/2000))/8000 + 3/8000,$
 $(51 \cos(3927/20000) \exp(-693/4000))/40000 - (9 \exp(-693/4000) \sin(3927/20000))/8000 + 3/8000,$
 $(51 \cos(493/2500) \exp(-87/500))/40000 - (9 \exp(-87/500) \sin(493/2500))/8000 + 3/8000,$
 $(51 \cos(3961/20000) \exp(-699/4000))/40000 - (9 \exp(-699/4000) \sin(3961/20000))/8000 + 3/8000,$
 $(51 \cos(1989/10000) \exp(-351/2000))/40000 - (9 \exp(-351/2000) \sin(1989/10000))/8000 + 3/8000,$
 $(51 \cos(799/4000) \exp(-141/800))/40000 - (9 \exp(-141/800) \sin(799/4000))/8000 + 3/8000,$
 $(51 \cos(1003/5000) \exp(-177/1000))/40000 - (9 \exp(-177/1000) \sin(1003/5000))/8000 + 3/8000,$
 $(51 \cos(4029/20000) \exp(-711/4000))/40000 - (9 \exp(-711/4000) \sin(4029/20000))/8000 + 3/8000,$
 $(51 \cos(2023/10000) \exp(-357/2000))/40000 - (9 \exp(-357/2000) \sin(2023/10000))/8000 + 3/8000,$
 $(51 \cos(4063/20000) \exp(-717/4000))/40000 - (9 \exp(-717/4000) \sin(4063/20000))/8000 + 3/8000,$
 $(51 \cos(51/250) \exp(-9/50))/40000 - (9 \exp(-9/50) \sin(51/250))/8000 + 3/8000,$
 $(51 \cos(4097/20000) \exp(-723/4000))/40000 - (9 \exp(-723/4000) \sin(4097/20000))/8000 + 3/8000,$
 $(51 \cos(2057/10000) \exp(-363/2000))/40000 - (9 \exp(-363/2000) \sin(2057/10000))/8000 + 3/8000,$
 $(51 \cos(4131/20000) \exp(-729/4000))/40000 - (9 \exp(-729/4000) \sin(4131/20000))/8000 + 3/8000,$
 $(51 \cos(1037/5000) \exp(-183/1000))/40000 - (9 \exp(-183/1000) \sin(1037/5000))/8000 + 3/8000,$
 $(51 \cos(833/4000) \exp(-147/800))/40000 - (9 \exp(-147/800) \sin(833/4000))/8000 + 3/8000,$
 $(51 \cos(2091/10000) \exp(-369/2000))/40000 - (9 \exp(-369/2000) \sin(2091/10000))/8000 + 3/8000,$

$(51 \cdot \cos(4199/20000) \cdot \exp(-741/4000))/40000 - (9 \cdot \exp(-741/4000) \cdot \sin(4199/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(527/2500) \cdot \exp(-93/500))/40000 - (9 \cdot \exp(-93/500) \cdot \sin(527/2500))/8000 + 3/8000,$
 $(51 \cdot \cos(4233/20000) \cdot \exp(-747/4000))/40000 - (9 \cdot \exp(-747/4000) \cdot \sin(4233/20000))/8000 + 3/8000,$
 $(51 \cdot \cos(17/80) \cdot \exp(-3/16))/40000 - (9 \cdot \exp(-3/16) \cdot \sin(17/80))/8000 + 3/8000]$

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$[-153/80000, - (153 \cdot \cos(17/20000) \cdot \exp(-3/4000))/80000 - (3 \cdot \exp(-3/4000) \cdot \sin(17/20000))/12500, -$
 $(153 \cdot \cos(17/10000) \cdot \exp(-3/2000))/80000 - (3 \cdot \exp(-3/2000) \cdot \sin(17/10000))/12500, - (153 \cdot \cos(51/20000) \cdot \exp(-9/4000))/80000 - (3 \cdot \exp(-9/4000) \cdot \sin(51/20000))/12500, -$
 $(153 \cdot \cos(17/5000) \cdot \exp(-3/1000))/80000 - (3 \cdot \exp(-3/1000) \cdot \sin(17/5000))/12500, - (153 \cdot \cos(17/4000) \cdot \exp(-3/800))/80000 - (3 \cdot \exp(-3/800) \cdot \sin(17/4000))/12500, -$
 $(153 \cdot \cos(51/10000) \cdot \exp(-9/2000))/80000 - (3 \cdot \exp(-9/2000) \cdot \sin(51/10000))/12500, - (153 \cdot \cos(119/20000) \cdot \exp(-21/4000))/80000 - (3 \cdot \exp(-21/4000) \cdot \sin(119/20000))/12500,$
 $- (153 \cdot \cos(17/2500) \cdot \exp(-3/500))/80000 - (3 \cdot \exp(-3/500) \cdot \sin(17/2500))/12500, - (153 \cdot \cos(153/20000) \cdot \exp(-27/4000))/80000 - (3 \cdot \exp(-27/4000) \cdot \sin(153/20000))/12500,$
 $- (153 \cdot \cos(17/2000) \cdot \exp(-3/400))/80000 - (3 \cdot \exp(-3/400) \cdot \sin(17/2000))/12500, - (153 \cdot \cos(187/20000) \cdot \exp(-33/4000))/80000 - (3 \cdot \exp(-33/4000) \cdot \sin(187/20000))/12500,$
 $- (153 \cdot \cos(51/5000) \cdot \exp(-9/1000))/80000 - (3 \cdot \exp(-9/1000) \cdot \sin(51/5000))/12500, - (153 \cdot \cos(221/20000) \cdot \exp(-39/4000))/80000 - (3 \cdot \exp(-39/4000) \cdot \sin(221/20000))/12500,$
 $- (153 \cdot \cos(119/10000) \cdot \exp(-21/2000))/80000 - (3 \cdot \exp(-21/2000) \cdot \sin(119/10000))/12500, - (153 \cdot \cos(51/4000) \cdot \exp(-9/800))/80000 - (3 \cdot \exp(-9/800) \cdot \sin(51/4000))/12500, -$
 $(153 \cdot \cos(17/1250) \cdot \exp(-3/250))/80000 - (3 \cdot \exp(-3/250) \cdot \sin(17/1250))/12500, - (153 \cdot \cos(289/20000) \cdot \exp(-51/4000))/80000 - (3 \cdot \exp(-51/4000) \cdot \sin(289/20000))/12500,$
 $- (153 \cdot \cos(153/10000) \cdot \exp(-27/2000))/80000 - (3 \cdot \exp(-27/2000) \cdot \sin(153/10000))/12500, -$
 $(153 \cdot \cos(323/20000) \cdot \exp(-57/4000))/80000 - (3 \cdot \exp(-57/4000) \cdot \sin(323/20000))/12500, - (153 \cdot \cos(17/1000) \cdot \exp(-3/200))/80000 - (3 \cdot \exp(-3/200) \cdot \sin(17/1000))/12500, -$
 $(153 \cdot \cos(357/20000) \cdot \exp(-63/4000))/80000 - (3 \cdot \exp(-63/4000) \cdot \sin(357/20000))/12500, -$
 $(153 \cdot \cos(187/10000) \cdot \exp(-33/2000))/80000 - (3 \cdot \exp(-33/2000) \cdot \sin(187/10000))/12500, -$
 $(153 \cdot \cos(391/20000) \cdot \exp(-69/4000))/80000 - (3 \cdot \exp(-69/4000) \cdot \sin(391/20000))/12500, - (153 \cdot \cos(51/2500) \cdot \exp(-9/500))/80000 - (3 \cdot \exp(-9/500) \cdot \sin(51/2500))/12500, -$
 $(153 \cdot \cos(17/800) \cdot \exp(-3/160))/80000 - (3 \cdot \exp(-3/160) \cdot \sin(17/800))/12500, - (153 \cdot \cos(221/10000) \cdot \exp(-39/2000))/80000 - (3 \cdot \exp(-39/2000) \cdot \sin(221/10000))/12500,$
 $- (153 \cdot \cos(459/20000) \cdot \exp(-81/4000))/80000 - (3 \cdot \exp(-81/4000) \cdot \sin(459/20000))/12500, -$
 $(153 \cdot \cos(119/5000) \cdot \exp(-21/1000))/80000 - (3 \cdot \exp(-21/1000) \cdot \sin(119/5000))/12500, -$
 $(153 \cdot \cos(493/20000) \cdot \exp(-87/4000))/80000 - (3 \cdot \exp(-$

87/4000)*sin(493/20000))/12500, - (153*cos(51/2000)*exp(-9/400))/80000 - (3*exp(-9/400)*sin(51/2000))/12500, - (153*cos(527/20000)*exp(-93/4000))/80000 - (3*exp(-93/4000)*sin(527/20000))/12500, - (153*cos(17/625)*exp(-3/125))/80000 - (3*exp(-3/125)*sin(17/625))/12500, - (153*cos(561/20000)*exp(-99/4000))/80000 - (3*exp(-99/4000)*sin(561/20000))/12500, - (153*cos(289/10000)*exp(-51/2000))/80000 - (3*exp(-51/2000)*sin(289/10000))/12500, - (153*cos(119/4000)*exp(-21/800))/80000 - (3*exp(-21/800)*sin(119/4000))/12500, - (153*cos(153/5000)*exp(-27/1000))/80000 - (3*exp(-27/1000)*sin(153/5000))/12500, - (153*cos(629/20000)*exp(-111/4000))/80000 - (3*exp(-111/4000)*sin(629/20000))/12500, - (153*cos(323/10000)*exp(-57/2000))/80000 - (3*exp(-57/2000)*sin(323/10000))/12500, - (153*cos(663/20000)*exp(-117/4000))/80000 - (3*exp(-117/4000)*sin(663/20000))/12500, - (153*cos(17/500)*exp(-3/100))/80000 - (3*exp(-3/100)*sin(17/500))/12500, - (153*cos(697/20000)*exp(-123/4000))/80000 - (3*exp(-123/4000)*sin(697/20000))/12500, - (153*cos(357/10000)*exp(-63/2000))/80000 - (3*exp(-63/2000)*sin(357/10000))/12500, - (153*cos(731/20000)*exp(-129/4000))/80000 - (3*exp(-129/4000)*sin(731/20000))/12500, - (153*cos(187/5000)*exp(-33/1000))/80000 - (3*exp(-33/1000)*sin(187/5000))/12500, - (153*cos(153/4000)*exp(-27/800))/80000 - (3*exp(-27/800)*sin(153/4000))/12500, - (153*cos(391/10000)*exp(-69/2000))/80000 - (3*exp(-69/2000)*sin(391/10000))/12500, - (153*cos(799/20000)*exp(-141/4000))/80000 - (3*exp(-141/4000)*sin(799/20000))/12500, - (153*cos(51/1250)*exp(-9/250))/80000 - (3*exp(-9/250)*sin(51/1250))/12500, - (153*cos(833/20000)*exp(-147/4000))/80000 - (3*exp(-147/4000)*sin(833/20000))/12500, - (153*cos(17/400)*exp(-3/80))/80000 - (3*exp(-3/80)*sin(17/400))/12500, - (153*cos(867/20000)*exp(-153/4000))/80000 - (3*exp(-153/4000)*sin(867/20000))/12500, - (153*cos(221/5000)*exp(-39/1000))/80000 - (3*exp(-39/1000)*sin(221/5000))/12500, - (153*cos(901/20000)*exp(-159/4000))/80000 - (3*exp(-159/4000)*sin(901/20000))/12500, - (153*cos(459/10000)*exp(-81/2000))/80000 - (3*exp(-81/2000)*sin(459/10000))/12500, - (153*cos(187/4000)*exp(-33/800))/80000 - (3*exp(-33/800)*sin(187/4000))/12500, - (153*cos(119/2500)*exp(-21/500))/80000 - (3*exp(-21/500)*sin(119/2500))/12500, - (153*cos(969/20000)*exp(-171/4000))/80000 - (3*exp(-171/4000)*sin(969/20000))/12500, - (153*cos(493/10000)*exp(-87/2000))/80000 - (3*exp(-87/2000)*sin(493/10000))/12500, - (153*cos(1003/20000)*exp(-177/4000))/80000 - (3*exp(-177/4000)*sin(1003/20000))/12500, - (153*cos(51/1000)*exp(-9/200))/80000 - (3*exp(-9/200)*sin(51/1000))/12500, - (153*cos(1037/20000)*exp(-183/4000))/80000 - (3*exp(-183/4000)*sin(1037/20000))/12500, -

(153*cos(527/10000)*exp(-93/2000))/80000 - (3*exp(-93/2000)*sin(527/10000))/12500, -
(153*cos(1071/20000)*exp(-189/4000))/80000 - (3*exp(-189/4000)*sin(1071/20000))/12500, -
(153*cos(34/625)*exp(-6/125))/80000 - (3*exp(-6/125)*sin(34/625))/12500, - (153*cos(221/4000)*exp(-39/800))/80000 - (3*exp(-39/800)*sin(221/4000))/12500, -
(153*cos(561/10000)*exp(-99/2000))/80000 - (3*exp(-99/2000)*sin(561/10000))/12500, -
(153*cos(1139/20000)*exp(-201/4000))/80000 - (3*exp(-201/4000)*sin(1139/20000))/12500, -
(153*cos(289/5000)*exp(-51/1000))/80000 - (3*exp(-51/1000)*sin(289/5000))/12500, -
(153*cos(1173/20000)*exp(-207/4000))/80000 - (3*exp(-207/4000)*sin(1173/20000))/12500, -
(153*cos(119/2000)*exp(-21/400))/80000 - (3*exp(-21/400)*sin(119/2000))/12500, -
(153*cos(1207/20000)*exp(-213/4000))/80000 - (3*exp(-213/4000)*sin(1207/20000))/12500, -
(153*cos(153/2500)*exp(-27/500))/80000 - (3*exp(-27/500)*sin(153/2500))/12500, -
(153*cos(1241/20000)*exp(-219/4000))/80000 - (3*exp(-219/4000)*sin(1241/20000))/12500, -
(153*cos(629/10000)*exp(-111/2000))/80000 - (3*exp(-111/2000)*sin(629/10000))/12500, - (153*cos(51/800)*exp(-9/160))/80000 - (3*exp(-9/160)*sin(51/800))/12500, -
(153*cos(323/5000)*exp(-57/1000))/80000 - (3*exp(-57/1000)*sin(323/5000))/12500, -
(153*cos(1309/20000)*exp(-231/4000))/80000 - (3*exp(-231/4000)*sin(1309/20000))/12500, -
(153*cos(663/10000)*exp(-117/2000))/80000 - (3*exp(-117/2000)*sin(663/10000))/12500, -
(153*cos(1343/20000)*exp(-237/4000))/80000 - (3*exp(-237/4000)*sin(1343/20000))/12500, -
(153*cos(17/250)*exp(-3/50))/80000 - (3*exp(-3/50)*sin(17/250))/12500, - (153*cos(1377/20000)*exp(-243/4000))/80000 - (3*exp(-243/4000)*sin(1377/20000))/12500, -
(153*cos(697/10000)*exp(-123/2000))/80000 - (3*exp(-123/2000)*sin(697/10000))/12500, -
(153*cos(1411/20000)*exp(-249/4000))/80000 - (3*exp(-249/4000)*sin(1411/20000))/12500, -
(153*cos(357/5000)*exp(-63/1000))/80000 - (3*exp(-63/1000)*sin(357/5000))/12500, - (153*cos(289/4000)*exp(-51/800))/80000 - (3*exp(-51/800)*sin(289/4000))/12500, -
(153*cos(731/10000)*exp(-129/2000))/80000 - (3*exp(-129/2000)*sin(731/10000))/12500, -
(153*cos(1479/20000)*exp(-261/4000))/80000 - (3*exp(-261/4000)*sin(1479/20000))/12500, -
(153*cos(187/2500)*exp(-33/500))/80000 - (3*exp(-33/500)*sin(187/2500))/12500, -
(153*cos(1513/20000)*exp(-267/4000))/80000 - (3*exp(-267/4000)*sin(1513/20000))/12500, -
(153*cos(153/2000)*exp(-27/400))/80000 - (3*exp(-27/400)*sin(153/2000))/12500, -
(153*cos(1547/20000)*exp(-273/4000))/80000 - (3*exp(-273/4000)*sin(1547/20000))/12500, -
(153*cos(391/5000)*exp(-69/1000))/80000 - (3*exp(-69/1000)*sin(391/5000))/12500, -

69/1000)*sin(391/5000))/12500, -
(153*cos(1581/20000)*exp(-279/4000))/80000 - (3*exp(-
279/4000)*sin(1581/20000))/12500, -
(153*cos(799/10000)*exp(-141/2000))/80000 - (3*exp(-
141/2000)*sin(799/10000))/12500, -
(153*cos(323/4000)*exp(-57/800))/80000 - (3*exp(-
57/800)*sin(323/4000))/12500, - (153*cos(51/625)*exp(-
9/125))/80000 - (3*exp(-9/125)*sin(51/625))/12500, -
(153*cos(1649/20000)*exp(-291/4000))/80000 - (3*exp(-
291/4000)*sin(1649/20000))/12500, -
(153*cos(833/10000)*exp(-147/2000))/80000 - (3*exp(-
147/2000)*sin(833/10000))/12500, -
(153*cos(1683/20000)*exp(-297/4000))/80000 - (3*exp(-
297/4000)*sin(1683/20000))/12500, -
(153*cos(17/200)*exp(-3/40))/80000 - (3*exp(-
3/40)*sin(17/200))/12500, - (153*cos(1717/20000)*exp(-
303/4000))/80000 - (3*exp(-
303/4000)*sin(1717/20000))/12500, -
(153*cos(867/10000)*exp(-153/2000))/80000 - (3*exp(-
153/2000)*sin(867/10000))/12500, -
(153*cos(1751/20000)*exp(-309/4000))/80000 - (3*exp(-
309/4000)*sin(1751/20000))/12500, -
(153*cos(221/2500)*exp(-39/500))/80000 - (3*exp(-
39/500)*sin(221/2500))/12500, - (153*cos(357/4000)*exp(-
63/800))/80000 - (3*exp(-63/800)*sin(357/4000))/12500, -
(153*cos(901/10000)*exp(-159/2000))/80000 - (3*exp(-
159/2000)*sin(901/10000))/12500, -
(153*cos(1819/20000)*exp(-321/4000))/80000 - (3*exp(-
321/4000)*sin(1819/20000))/12500, -
(153*cos(459/5000)*exp(-81/1000))/80000 - (3*exp(-
81/1000)*sin(459/5000))/12500, -
(153*cos(1853/20000)*exp(-327/4000))/80000 - (3*exp(-
327/4000)*sin(1853/20000))/12500, -
(153*cos(187/2000)*exp(-33/400))/80000 - (3*exp(-
33/400)*sin(187/2000))/12500, -
(153*cos(1887/20000)*exp(-333/4000))/80000 - (3*exp(-
333/4000)*sin(1887/20000))/12500, -
(153*cos(119/1250)*exp(-21/250))/80000 - (3*exp(-
21/250)*sin(119/1250))/12500, -
(153*cos(1921/20000)*exp(-339/4000))/80000 - (3*exp(-
339/4000)*sin(1921/20000))/12500, -
(153*cos(969/10000)*exp(-171/2000))/80000 - (3*exp(-
171/2000)*sin(969/10000))/12500, -
(153*cos(391/4000)*exp(-69/800))/80000 - (3*exp(-
69/800)*sin(391/4000))/12500, - (153*cos(493/5000)*exp(-
87/1000))/80000 - (3*exp(-87/1000)*sin(493/5000))/12500,
- (153*cos(1989/20000)*exp(-351/4000))/80000 - (3*exp(-
351/4000)*sin(1989/20000))/12500, -
(153*cos(1003/10000)*exp(-177/2000))/80000 - (3*exp(-
177/2000)*sin(1003/10000))/12500, -
(153*cos(2023/20000)*exp(-357/4000))/80000 - (3*exp(-
357/4000)*sin(2023/20000))/12500, -
(153*cos(51/500)*exp(-9/100))/80000 - (3*exp(-
9/100)*sin(51/500))/12500, - (153*cos(2057/20000)*exp(-
363/4000))/80000 - (3*exp(-
363/4000)*sin(2057/20000))/12500, -
(153*cos(1037/10000)*exp(-183/2000))/80000 - (3*exp(-
183/2000)*sin(1037/10000))/12500, -

$(153 \cdot \cos(2091/20000) \cdot \exp(-369/4000)) / 80000 - (3 \cdot \exp(-369/4000) \cdot \sin(2091/20000)) / 12500, -$
 $(153 \cdot \cos(527/5000) \cdot \exp(-93/1000)) / 80000 - (3 \cdot \exp(-93/1000) \cdot \sin(527/5000)) / 12500, - (153 \cdot \cos(17/160) \cdot \exp(-3/32)) / 80000 - (3 \cdot \exp(-3/32) \cdot \sin(17/160)) / 12500, -$
 $(153 \cdot \cos(1071/10000) \cdot \exp(-189/2000)) / 80000 - (3 \cdot \exp(-189/2000) \cdot \sin(1071/10000)) / 12500, -$
 $(153 \cdot \cos(2159/20000) \cdot \exp(-381/4000)) / 80000 - (3 \cdot \exp(-381/4000) \cdot \sin(2159/20000)) / 12500, -$
 $(153 \cdot \cos(68/625) \cdot \exp(-12/125)) / 80000 - (3 \cdot \exp(-12/125) \cdot \sin(68/625)) / 12500, - (153 \cdot \cos(2193/20000) \cdot \exp(-387/4000)) / 80000 - (3 \cdot \exp(-387/4000) \cdot \sin(2193/20000)) / 12500, -$
 $(153 \cdot \cos(221/2000) \cdot \exp(-39/400)) / 80000 - (3 \cdot \exp(-39/400) \cdot \sin(221/2000)) / 12500, -$
 $(153 \cdot \cos(2227/20000) \cdot \exp(-393/4000)) / 80000 - (3 \cdot \exp(-393/4000) \cdot \sin(2227/20000)) / 12500, -$
 $(153 \cdot \cos(561/5000) \cdot \exp(-99/1000)) / 80000 - (3 \cdot \exp(-99/1000) \cdot \sin(561/5000)) / 12500, -$
 $(153 \cdot \cos(2261/20000) \cdot \exp(-399/4000)) / 80000 - (3 \cdot \exp(-399/4000) \cdot \sin(2261/20000)) / 12500, -$
 $(153 \cdot \cos(1139/10000) \cdot \exp(-201/2000)) / 80000 - (3 \cdot \exp(-201/2000) \cdot \sin(1139/10000)) / 12500, -$
 $(153 \cdot \cos(459/4000) \cdot \exp(-81/800)) / 80000 - (3 \cdot \exp(-81/800) \cdot \sin(459/4000)) / 12500, - (153 \cdot \cos(289/2500) \cdot \exp(-51/500)) / 80000 - (3 \cdot \exp(-51/500) \cdot \sin(289/2500)) / 12500, -$
 $(153 \cdot \cos(2329/20000) \cdot \exp(-411/4000)) / 80000 - (3 \cdot \exp(-411/4000) \cdot \sin(2329/20000)) / 12500, -$
 $(153 \cdot \cos(1173/10000) \cdot \exp(-207/2000)) / 80000 - (3 \cdot \exp(-207/2000) \cdot \sin(1173/10000)) / 12500, -$
 $(153 \cdot \cos(2363/20000) \cdot \exp(-417/4000)) / 80000 - (3 \cdot \exp(-417/4000) \cdot \sin(2363/20000)) / 12500, -$
 $(153 \cdot \cos(119/1000) \cdot \exp(-21/200)) / 80000 - (3 \cdot \exp(-21/200) \cdot \sin(119/1000)) / 12500, -$
 $(153 \cdot \cos(2397/20000) \cdot \exp(-423/4000)) / 80000 - (3 \cdot \exp(-423/4000) \cdot \sin(2397/20000)) / 12500, -$
 $(153 \cdot \cos(1207/10000) \cdot \exp(-213/2000)) / 80000 - (3 \cdot \exp(-213/2000) \cdot \sin(1207/10000)) / 12500, -$
 $(153 \cdot \cos(2431/20000) \cdot \exp(-429/4000)) / 80000 - (3 \cdot \exp(-429/4000) \cdot \sin(2431/20000)) / 12500, -$
 $(153 \cdot \cos(153/1250) \cdot \exp(-27/250)) / 80000 - (3 \cdot \exp(-27/250) \cdot \sin(153/1250)) / 12500, - (153 \cdot \cos(493/4000) \cdot \exp(-87/800)) / 80000 - (3 \cdot \exp(-87/800) \cdot \sin(493/4000)) / 12500, -$
 $(153 \cdot \cos(1241/10000) \cdot \exp(-219/2000)) / 80000 - (3 \cdot \exp(-219/2000) \cdot \sin(1241/10000)) / 12500, -$
 $(153 \cdot \cos(2499/20000) \cdot \exp(-441/4000)) / 80000 - (3 \cdot \exp(-441/4000) \cdot \sin(2499/20000)) / 12500, -$
 $(153 \cdot \cos(629/5000) \cdot \exp(-111/1000)) / 80000 - (3 \cdot \exp(-111/1000) \cdot \sin(629/5000)) / 12500, -$
 $(153 \cdot \cos(2533/20000) \cdot \exp(-447/4000)) / 80000 - (3 \cdot \exp(-447/4000) \cdot \sin(2533/20000)) / 12500, -$
 $(153 \cdot \cos(51/400) \cdot \exp(-9/80)) / 80000 - (3 \cdot \exp(-9/80) \cdot \sin(51/400)) / 12500, - (153 \cdot \cos(2567/20000) \cdot \exp(-453/4000)) / 80000 - (3 \cdot \exp(-453/4000) \cdot \sin(2567/20000)) / 12500, -$
 $(153 \cdot \cos(323/2500) \cdot \exp(-57/500)) / 80000 - (3 \cdot \exp(-57/500) \cdot \sin(323/2500)) / 12500, -$
 $(153 \cdot \cos(2601/20000) \cdot \exp(-459/4000)) / 80000 - (3 \cdot \exp(-$

459/4000)*sin(2601/20000))/12500, -
(153*cos(1309/10000)*exp(-231/2000))/80000 - (3*exp(-
231/2000)*sin(1309/10000))/12500, -
(153*cos(527/4000)*exp(-93/800))/80000 - (3*exp(-
93/800)*sin(527/4000))/12500, - (153*cos(663/5000)*exp(-
117/1000))/80000 - (3*exp(-
117/1000)*sin(663/5000))/12500, -
(153*cos(2669/20000)*exp(-471/4000))/80000 - (3*exp(-
471/4000)*sin(2669/20000))/12500, -
(153*cos(1343/10000)*exp(-237/2000))/80000 - (3*exp(-
237/2000)*sin(1343/10000))/12500, -
(153*cos(2703/20000)*exp(-477/4000))/80000 - (3*exp(-
477/4000)*sin(2703/20000))/12500, -
(153*cos(17/125)*exp(-3/25))/80000 - (3*exp(-
3/25)*sin(17/125))/12500, - (153*cos(2737/20000)*exp(-
483/4000))/80000 - (3*exp(-
483/4000)*sin(2737/20000))/12500, -
(153*cos(1377/10000)*exp(-243/2000))/80000 - (3*exp(-
243/2000)*sin(1377/10000))/12500, -
(153*cos(2771/20000)*exp(-489/4000))/80000 - (3*exp(-
489/4000)*sin(2771/20000))/12500, -
(153*cos(697/5000)*exp(-123/1000))/80000 - (3*exp(-
123/1000)*sin(697/5000))/12500, -
(153*cos(561/4000)*exp(-99/800))/80000 - (3*exp(-
99/800)*sin(561/4000))/12500, -
(153*cos(1411/10000)*exp(-249/2000))/80000 - (3*exp(-
249/2000)*sin(1411/10000))/12500, -
(153*cos(2839/20000)*exp(-501/4000))/80000 - (3*exp(-
501/4000)*sin(2839/20000))/12500, -
(153*cos(357/2500)*exp(-63/500))/80000 - (3*exp(-
63/500)*sin(357/2500))/12500, -
(153*cos(2873/20000)*exp(-507/4000))/80000 - (3*exp(-
507/4000)*sin(2873/20000))/12500, -
(153*cos(289/2000)*exp(-51/400))/80000 - (3*exp(-
51/400)*sin(289/2000))/12500, -
(153*cos(2907/20000)*exp(-513/4000))/80000 - (3*exp(-
513/4000)*sin(2907/20000))/12500, -
(153*cos(731/5000)*exp(-129/1000))/80000 - (3*exp(-
129/1000)*sin(731/5000))/12500, -
(153*cos(2941/20000)*exp(-519/4000))/80000 - (3*exp(-
519/4000)*sin(2941/20000))/12500, -
(153*cos(1479/10000)*exp(-261/2000))/80000 - (3*exp(-
261/2000)*sin(1479/10000))/12500, -
(153*cos(119/800)*exp(-21/160))/80000 - (3*exp(-
21/160)*sin(119/800))/12500, - (153*cos(187/1250)*exp(-
33/250))/80000 - (3*exp(-33/250)*sin(187/1250))/12500, -
(153*cos(3009/20000)*exp(-531/4000))/80000 - (3*exp(-
531/4000)*sin(3009/20000))/12500, -
(153*cos(1513/10000)*exp(-267/2000))/80000 - (3*exp(-
267/2000)*sin(1513/10000))/12500, -
(153*cos(3043/20000)*exp(-537/4000))/80000 - (3*exp(-
537/4000)*sin(3043/20000))/12500, -
(153*cos(153/1000)*exp(-27/200))/80000 - (3*exp(-
27/200)*sin(153/1000))/12500, -
(153*cos(3077/20000)*exp(-543/4000))/80000 - (3*exp(-
543/4000)*sin(3077/20000))/12500, -
(153*cos(1547/10000)*exp(-273/2000))/80000 - (3*exp(-
273/2000)*sin(1547/10000))/12500, -

(153*cos(3111/20000)*exp(-549/4000))/80000 - (3*exp(-549/4000)*sin(3111/20000))/12500, -
(153*cos(391/2500)*exp(-69/500))/80000 - (3*exp(-69/500)*sin(391/2500))/12500, - (153*cos(629/4000)*exp(-111/800))/80000 - (3*exp(-111/800)*sin(629/4000))/12500, -
(153*cos(1581/10000)*exp(-279/2000))/80000 - (3*exp(-279/2000)*sin(1581/10000))/12500, -
(153*cos(3179/20000)*exp(-561/4000))/80000 - (3*exp(-561/4000)*sin(3179/20000))/12500, -
(153*cos(799/5000)*exp(-141/1000))/80000 - (3*exp(-141/1000)*sin(799/5000))/12500, -
(153*cos(3213/20000)*exp(-567/4000))/80000 - (3*exp(-567/4000)*sin(3213/20000))/12500, -
(153*cos(323/2000)*exp(-57/400))/80000 - (3*exp(-57/400)*sin(323/2000))/12500, -
(153*cos(3247/20000)*exp(-573/4000))/80000 - (3*exp(-573/4000)*sin(3247/20000))/12500, -
(153*cos(102/625)*exp(-18/125))/80000 - (3*exp(-18/125)*sin(102/625))/12500, - (153*cos(3281/20000)*exp(-579/4000))/80000 - (3*exp(-579/4000)*sin(3281/20000))/12500, -
(153*cos(1649/10000)*exp(-291/2000))/80000 - (3*exp(-291/2000)*sin(1649/10000))/12500, -
(153*cos(663/4000)*exp(-117/800))/80000 - (3*exp(-117/800)*sin(663/4000))/12500, - (153*cos(833/5000)*exp(-147/1000))/80000 - (3*exp(-147/1000)*sin(833/5000))/12500, -
(153*cos(3349/20000)*exp(-591/4000))/80000 - (3*exp(-591/4000)*sin(3349/20000))/12500, -
(153*cos(1683/10000)*exp(-297/2000))/80000 - (3*exp(-297/2000)*sin(1683/10000))/12500, -
(153*cos(3383/20000)*exp(-597/4000))/80000 - (3*exp(-597/4000)*sin(3383/20000))/12500, -
(153*cos(17/100)*exp(-3/20))/80000 - (3*exp(-3/20)*sin(17/100))/12500, - (153*cos(3417/20000)*exp(-603/4000))/80000 - (3*exp(-603/4000)*sin(3417/20000))/12500, -
(153*cos(1717/10000)*exp(-303/2000))/80000 - (3*exp(-303/2000)*sin(1717/10000))/12500, -
(153*cos(3451/20000)*exp(-609/4000))/80000 - (3*exp(-609/4000)*sin(3451/20000))/12500, -
(153*cos(867/5000)*exp(-153/1000))/80000 - (3*exp(-153/1000)*sin(867/5000))/12500, -
(153*cos(697/4000)*exp(-123/800))/80000 - (3*exp(-123/800)*sin(697/4000))/12500, -
(153*cos(1751/10000)*exp(-309/2000))/80000 - (3*exp(-309/2000)*sin(1751/10000))/12500, -
(153*cos(3519/20000)*exp(-621/4000))/80000 - (3*exp(-621/4000)*sin(3519/20000))/12500, -
(153*cos(221/1250)*exp(-39/250))/80000 - (3*exp(-39/250)*sin(221/1250))/12500, -
(153*cos(3553/20000)*exp(-627/4000))/80000 - (3*exp(-627/4000)*sin(3553/20000))/12500, -
(153*cos(357/2000)*exp(-63/400))/80000 - (3*exp(-63/400)*sin(357/2000))/12500, -
(153*cos(3587/20000)*exp(-633/4000))/80000 - (3*exp(-633/4000)*sin(3587/20000))/12500, -
(153*cos(901/5000)*exp(-159/1000))/80000 - (3*exp(-

159/1000)*sin(901/5000))/12500, -
(153*cos(3621/20000)*exp(-639/4000))/80000 - (3*exp(-
639/4000)*sin(3621/20000))/12500, -
(153*cos(1819/10000)*exp(-321/2000))/80000 - (3*exp(-
321/2000)*sin(1819/10000))/12500, -
(153*cos(731/4000)*exp(-129/800))/80000 - (3*exp(-
129/800)*sin(731/4000))/12500, - (153*cos(459/2500)*exp(-
81/500))/80000 - (3*exp(-81/500)*sin(459/2500))/12500, -
(153*cos(3689/20000)*exp(-651/4000))/80000 - (3*exp(-
651/4000)*sin(3689/20000))/12500, -
(153*cos(1853/10000)*exp(-327/2000))/80000 - (3*exp(-
327/2000)*sin(1853/10000))/12500, -
(153*cos(3723/20000)*exp(-657/4000))/80000 - (3*exp(-
657/4000)*sin(3723/20000))/12500, -
(153*cos(187/1000)*exp(-33/200))/80000 - (3*exp(-
33/200)*sin(187/1000))/12500, -
(153*cos(3757/20000)*exp(-663/4000))/80000 - (3*exp(-
663/4000)*sin(3757/20000))/12500, -
(153*cos(1887/10000)*exp(-333/2000))/80000 - (3*exp(-
333/2000)*sin(1887/10000))/12500, -
(153*cos(3791/20000)*exp(-669/4000))/80000 - (3*exp(-
669/4000)*sin(3791/20000))/12500, -
(153*cos(119/625)*exp(-21/125))/80000 - (3*exp(-
21/125)*sin(119/625))/12500, - (153*cos(153/800)*exp(-
27/160))/80000 - (3*exp(-27/160)*sin(153/800))/12500, -
(153*cos(1921/10000)*exp(-339/2000))/80000 - (3*exp(-
339/2000)*sin(1921/10000))/12500, -
(153*cos(3859/20000)*exp(-681/4000))/80000 - (3*exp(-
681/4000)*sin(3859/20000))/12500, -
(153*cos(969/5000)*exp(-171/1000))/80000 - (3*exp(-
171/1000)*sin(969/5000))/12500, -
(153*cos(3893/20000)*exp(-687/4000))/80000 - (3*exp(-
687/4000)*sin(3893/20000))/12500, -
(153*cos(391/2000)*exp(-69/400))/80000 - (3*exp(-
69/400)*sin(391/2000))/12500, -
(153*cos(3927/20000)*exp(-693/4000))/80000 - (3*exp(-
693/4000)*sin(3927/20000))/12500, -
(153*cos(493/2500)*exp(-87/500))/80000 - (3*exp(-
87/500)*sin(493/2500))/12500, -
(153*cos(3961/20000)*exp(-699/4000))/80000 - (3*exp(-
699/4000)*sin(3961/20000))/12500, -
(153*cos(1989/10000)*exp(-351/2000))/80000 - (3*exp(-
351/2000)*sin(1989/10000))/12500, -
(153*cos(799/4000)*exp(-141/800))/80000 - (3*exp(-
141/800)*sin(799/4000))/12500, -
(153*cos(1003/5000)*exp(-177/1000))/80000 - (3*exp(-
177/1000)*sin(1003/5000))/12500, -
(153*cos(4029/20000)*exp(-711/4000))/80000 - (3*exp(-
711/4000)*sin(4029/20000))/12500, -
(153*cos(2023/10000)*exp(-357/2000))/80000 - (3*exp(-
357/2000)*sin(2023/10000))/12500, -
(153*cos(4063/20000)*exp(-717/4000))/80000 - (3*exp(-
717/4000)*sin(4063/20000))/12500, -
(153*cos(51/250)*exp(-9/50))/80000 - (3*exp(-
9/50)*sin(51/250))/12500, - (153*cos(4097/20000)*exp(-
723/4000))/80000 - (3*exp(-
723/4000)*sin(4097/20000))/12500, -
(153*cos(2057/10000)*exp(-363/2000))/80000 - (3*exp(-

```

363/2000)*sin(2057/10000))/12500, -
(153*cos(4131/20000)*exp(-729/4000))/80000 - (3*exp(-
729/4000)*sin(4131/20000))/12500, -
(153*cos(1037/5000)*exp(-183/1000))/80000 - (3*exp(-
183/1000)*sin(1037/5000))/12500, -
(153*cos(833/4000)*exp(-147/800))/80000 - (3*exp(-
147/800)*sin(833/4000))/12500, -
(153*cos(2091/10000)*exp(-369/2000))/80000 - (3*exp(-
369/2000)*sin(2091/10000))/12500, -
(153*cos(4199/20000)*exp(-741/4000))/80000 - (3*exp(-
741/4000)*sin(4199/20000))/12500, -
(153*cos(527/2500)*exp(-93/500))/80000 - (3*exp(-
93/500)*sin(527/2500))/12500, -
(153*cos(4233/20000)*exp(-747/4000))/80000 - (3*exp(-
747/4000)*sin(4233/20000))/12500, - (153*cos(17/80)*exp(-
3/16))/80000 - (3*exp(-3/16)*sin(17/80))/12500]

```

>>

QUESTION 4(C)

CODES

```

commandwindow
clear
clc
close all
syms x
y=5*((sin(5*x))^5)
a=vpa(pi)
v=a*(int((y^2),0,a))
v=double(v)

```

OUTPUT

```

y =
5*sin(5*x)^5
a =
3.1415926535897932384626433832795
v =
60.721198952014608690095012987519
v =
    60.7212
>>

```