

```
clc
clear all
format short g
x=1,y=2
```

```
x =
    1
y =
    2
```

```
%%function call
f=Q0_01234567(x,y);
```

if it is like in below from reference

```
(1-x).^2+100*(y-x.^2).^2
```

```
ans =
    100
```

if it is like in below from reference

```
output=(1-x).^2+100*(y-x.^2).^2;
disp(['Answer=' num2str(output)])
```

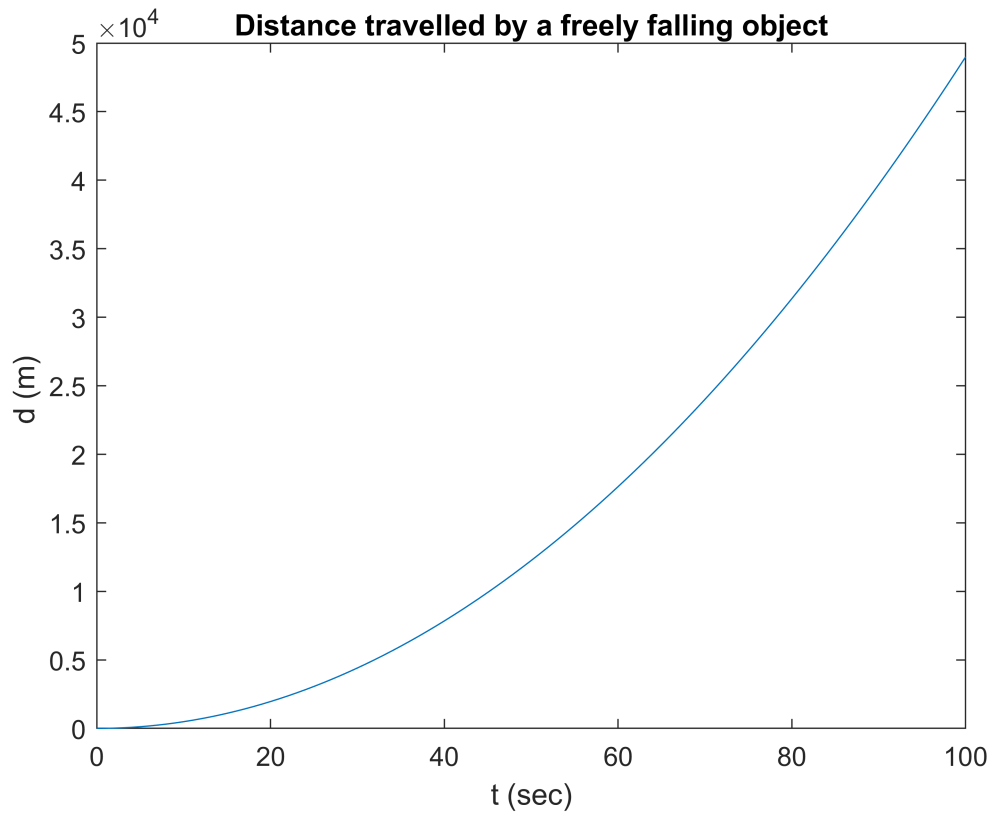
```
Answer=100
```

question 1 PART1

```
g = 9.8
```

```
g =
    9.8
```

```
t=0:1:100;
d=Q1_01234567(t,g);
plot(t,d)
title('Distance travelled by a freely falling object');
xlabel('t (sec)');
ylabel('d (m)');
```



PART 2

use of disp

```
disp('      t      d')
```

```
      t      d
```

```
X=[t' d'];
disp(X);
```

```

0         0
1         4.9
2        19.6
3        44.1
4        78.4
5       122.5
6       176.4
7       240.1
8       313.6
9       396.9
10      490
11     592.9
12     705.6
13     828.1
14     960.4
15    1102.5
16    1254.4
```

17	1416.1
18	1587.6
19	1768.9
20	1960
21	2160.9
22	2371.6
23	2592.1
24	2822.4
25	3062.5
26	3312.4
27	3572.1
28	3841.6
29	4120.9
30	4410
31	4708.9
32	5017.6
33	5336.1
34	5664.4
35	6002.5
36	6350.4
37	6708.1
38	7075.6
39	7452.9
40	7840
41	8236.9
42	8643.6
43	9060.1
44	9486.4
45	9922.5
46	10368
47	10824
48	11290
49	11765
50	12250
51	12745
52	13250
53	13764
54	14288
55	14823
56	15366
57	15920
58	16484
59	17057
60	17640
61	18233
62	18836
63	19448
64	20070
65	20703
66	21344
67	21996
68	22658
69	23329
70	24010
71	24701
72	25402
73	26112
74	26832
75	27563
76	28302
77	29052
78	29812
79	30581
80	31360
81	32149

```
82      32948
83      33756
84      34574
85      35403
86      36240
87      37088
88      37946
89      38813
90      39690
91      40577
92      41474
93      42380
94      43296
95      44223
96      45158
97      46104
98      47060
99      48025
100     49000
```

use of fprintf

```
A=[t' d'];
fprintf('%6s %12s\n', 't', 'd');
```

```
      t          d
```

```
fprintf('%6.2f %12.2f\n', A');
```

```
0.00      0.00
1.00      4.90
2.00     19.60
3.00     44.10
4.00     78.40
5.00    122.50
6.00    176.40
7.00    240.10
8.00    313.60
9.00    396.90
10.00   490.00
11.00   592.90
12.00   705.60
13.00   828.10
14.00   960.40
15.00  1102.50
16.00  1254.40
17.00  1416.10
18.00  1587.60
19.00  1768.90
20.00  1960.00
21.00  2160.90
22.00  2371.60
23.00  2592.10
24.00  2822.40
25.00  3062.50
26.00  3312.40
27.00  3572.10
28.00  3841.60
29.00  4120.90
30.00  4410.00
```

31.00	4708.90
32.00	5017.60
33.00	5336.10
34.00	5664.40
35.00	6002.50
36.00	6350.40
37.00	6708.10
38.00	7075.60
39.00	7452.90
40.00	7840.00
41.00	8236.90
42.00	8643.60
43.00	9060.10
44.00	9486.40
45.00	9922.50
46.00	10368.40
47.00	10824.10
48.00	11289.60
49.00	11764.90
50.00	12250.00
51.00	12744.90
52.00	13249.60
53.00	13764.10
54.00	14288.40
55.00	14822.50
56.00	15366.40
57.00	15920.10
58.00	16483.60
59.00	17056.90
60.00	17640.00
61.00	18232.90
62.00	18835.60
63.00	19448.10
64.00	20070.40
65.00	20702.50
66.00	21344.40
67.00	21996.10
68.00	22657.60
69.00	23328.90
70.00	24010.00
71.00	24700.90
72.00	25401.60
73.00	26112.10
74.00	26832.40
75.00	27562.50
76.00	28302.40
77.00	29052.10
78.00	29811.60
79.00	30580.90
80.00	31360.00
81.00	32148.90
82.00	32947.60
83.00	33756.10
84.00	34574.40
85.00	35402.50
86.00	36240.40
87.00	37088.10
88.00	37945.60
89.00	38812.90
90.00	39690.00
91.00	40576.90
92.00	41473.60
93.00	42380.10
94.00	43296.40
95.00	44222.50

```
96.00    45158.40
97.00    46104.10
98.00    47059.60
99.00    48024.90
100.00   49000.00
```

TASK 2

%Part 1

```
A=[ 2 5 8 11 14 17
    3 6 9 12 15 18
    4 7 10 13 16 19
    5 8 11 14 17 20
    6 9 12 15 18 21]
```

```
A =
     2     5     8    11    14    17
     3     6     9    12    15    18
     4     7    10    13    16    19
     5     8    11    14    17    20
     6     9    12    15    18    21
```

```
B= [5 10 15 20 25 30
    30 35 40 45 50 55
    55 60 65 70 75 80]
```

```
B =
     5    10    15    20    25    30
    30    35    40    45    50    55
    55    60    65    70    75    80
```

```
v=[99 98 97 96 95 94 93 92 91]
```

```
v =
    99    98    97    96    95    94    93    92    91
```

```
%replace the last four columns of the first and third rows of ? with the first four
%columns of the first two rows of ?
```

```
A([1 3], [end-3:end])
```

```
ans =
     8    11    14    17
    10    13    16    19
```

```
A([1 3], [end-3:end])=B([1 2], [1:4])
```

```
A =
     2     5     5    10    15    20
     3     6     9    12    15    18
     4     7    30    35    40    45
     5     8    11    14    17    20
```

6 9 12 15 18 21

```
%replace the last four columns of the fourth row of ?  
%with the elements 5 and 8 of ?  
A([4], [1:4])=v([1],[5:8])
```

```
A =  
 2 5 5 10 15 20  
 3 6 9 12 15 18  
 4 7 30 35 40 45  
95 94 93 92 17 20  
 6 9 12 15 18 21
```

```
%the last four columns of the fifth row of the  
%? with columns 3 through 5 of the third row of ?  
A([5], [1:4])=B([3], [3:6])
```

```
A =  
 2 5 5 10 15 20  
 3 6 9 12 15 18  
 4 7 30 35 40 45  
95 94 93 92 17 20  
65 70 75 80 18 21
```

PART B

```
A=[4 -2 6  
 2 8 2  
 6 10 3]
```

```
A =  
 4 -2 6  
 2 8 2  
 6 10 3
```

```
B=[8;4;0]
```

```
B =  
 8  
 4  
 0
```

```
X=inv(A)*B
```

```
X =  
 -1.8049  
 0.29268  
 2.6341
```

%for reference /practice only

```
function f=Q0_01234567(x,y)
%f=Q0_01234567(x,y)
f=(1-x).^2+100*(y-x.^2).^2;
end
%PART 1
% function of Part 1
function d=Q1_01234567(t,g)
d=(1/2)*g*t.^2;
end
```