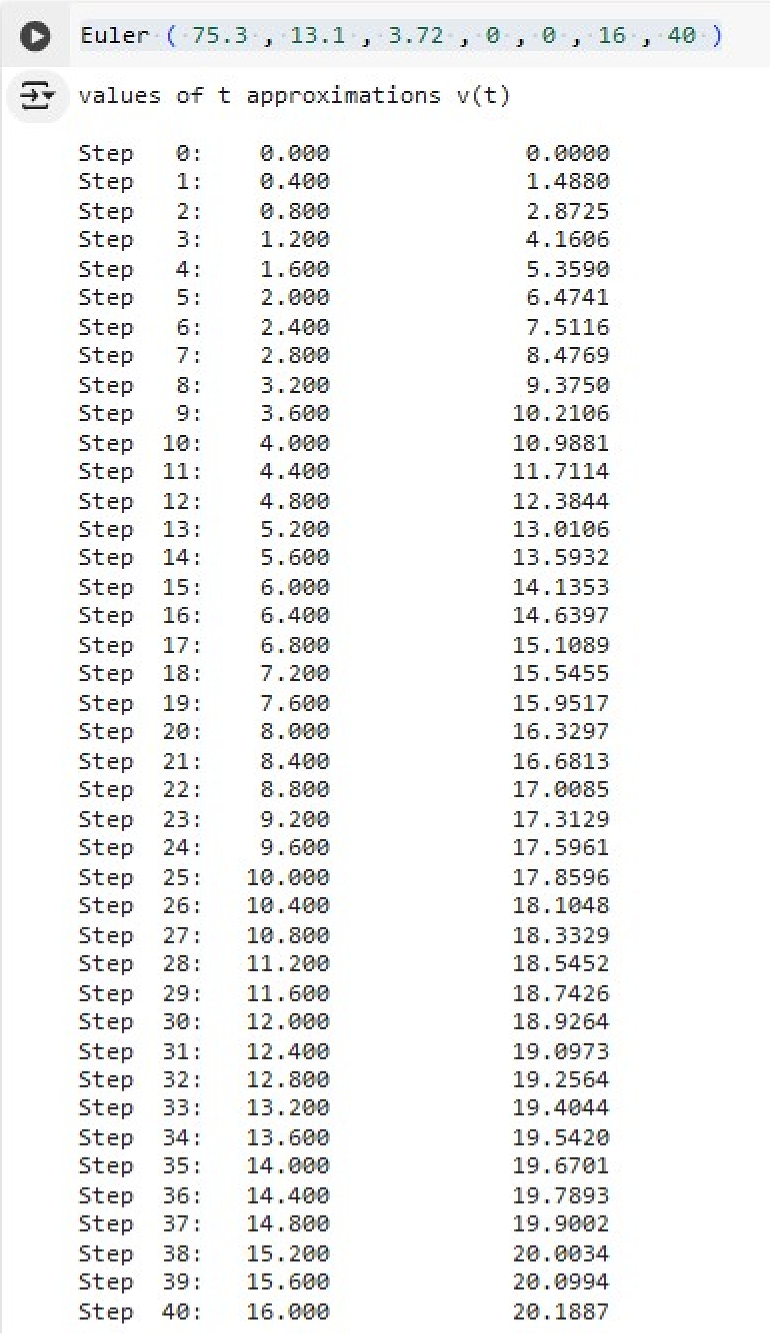
```
def Euler(m, c, g, t0, v0, tn, n):
  # print headings and initial conditions
  print(f"values of t approximations v(t)\n")
  print(f"Step   0: {'%8.3f'%t0} {'%19.4f'%v0}")

  # compute step size h
  h = (tn-t0)/n

  # set t, v, to the initial values
  t = t0
  v = v0

  # compute v(t) over n time steps using Euler’s method
  for x in range(n):
    v=v+(g-c/m*v)*h;
    t=t+h;
    print(f"Step {'%3.0f'%(x+1)}: {'%8.3f'%t} {'%19.4f'%v}")

# Euler ( 68.1 , 12.5 , 9.81 , 0 , 0 , 12 ,  6 )
```



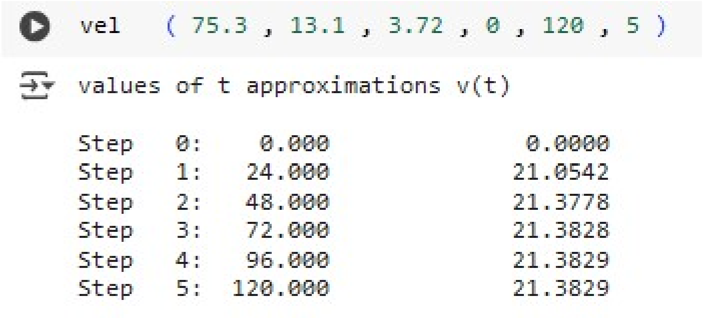
```
Euler ( 75.3 , 13.1 , 3.72 , 0 , 0 , 16 , 40 )
```

```
values of t approximations v(t)

Step   0:    0.000              0.0000
Step   1:    0.400              1.4880
Step   2:    0.800              2.8725
Step   3:    1.200              4.1606
Step   4:    1.600              5.3590
Step   5:    2.000              6.4741
Step   6:    2.400              7.5116
Step   7:    2.800              8.4769
Step   8:    3.200              9.3750
Step   9:    3.600             10.2106
Step  10:    4.000             10.9881
Step  11:    4.400             11.7114
Step  12:    4.800             12.3844
Step  13:    5.200             13.0106
Step  14:    5.600             13.5932
Step  15:    6.000             14.1353
Step  16:    6.400             14.6397
Step  17:    6.800             15.1089
Step  18:    7.200             15.5455
Step  19:    7.600             15.9517
Step  20:    8.000             16.3297
Step  21:    8.400             16.6813
Step  22:    8.800             17.0085
Step  23:    9.200             17.3129
Step  24:    9.600             17.5961
Step  25:   10.000             17.8596
Step  26:   10.400             18.1048
Step  27:   10.800             18.3329
Step  28:   11.200             18.5452
Step  29:   11.600             18.7426
Step  30:   12.000             18.9264
Step  31:   12.400             19.0973
Step  32:   12.800             19.2564
Step  33:   13.200             19.4044
Step  34:   13.600             19.5420
Step  35:   14.000             19.6701
Step  36:   14.400             19.7893
Step  37:   14.800             19.9002
Step  38:   15.200             20.0034
Step  39:   15.600             20.0994
Step  40:   16.000             20.1887
```

```
import math

def vel(m, c, g, t0, tn, n):
  # print headings and initial conditions
  t1 = g * m / c
  t2 = 1 - math.exp(-c * t0 / m)
  v=t1*t2

  print(f"values of t approximations v(t)\n")
  print(f"Step   0: {'%8.3f'%t0} {'%19.4f'%v}")

  # compute step size h
  h = (tn-t0)/n

  # set t, v, to the initial values
  t = t0

  # compute v(t) over n time steps using Euler’s method
  for x in range(n):
    t=t+h
    t1 = g * m / c
    t2 = 1 - math.exp(-c * t / m)
    v=t1*t2
    print(f"Step {'%3.0f'%(x+1)}: {'%8.3f'%t} {'%19.4f'%v}")

vel   ( 75.3 , 13.1 , 3.72 , 0 , 16 , 40 )
```

```
values of t approximations v(t)

Step   0:    0.000           0.0000
Step   1:    0.400           1.4374
Step   2:    0.800           2.7782
Step   3:    1.200           4.0288
Step   4:    1.600           5.1954
Step   5:    2.000           6.2836
Step   6:    2.400           7.2986
Step   7:    2.800           8.2454
Step   8:    3.200           9.1285
Step   9:    3.600           9.9523
Step  10:    4.000          10.7207
Step  11:    4.400          11.4374
Step  12:    4.800          12.1060
Step  13:    5.200             12.7296
Step  14:    5.600             13.3113
Step  15:    6.000             13.8539
Step  16:    6.400             14.3600
Step  17:    6.800             14.8321
Step  18:    7.200             15.2724
Step  19:    7.600             15.6832
Step  20:    8.000             16.0663
Step  21:    8.400             16.4237
Step  22:    8.800             16.7571
Step  23:    9.200             17.0681
Step  24:    9.600             17.3581
Step  25:   10.000              17.6287
Step  26:   10.400              17.8810
Step  27:   10.800              18.1164
Step  28:   11.200              18.3360
Step  29:   11.600              18.5408
Step  30:   12.000              18.7319
Step  31:   12.400              18.9101
Step  32:   12.800              19.0763
Step  33:   13.200              19.2314
Step  34:   13.600              19.3760
Step  35:   14.000              19.5109
Step  36:   14.400              19.6368
Step  37:   14.800              19.7541
Step  38:   15.200              19.8636
Step  39:   15.600              19.9658
Step  40:   16.000              20.0610
```

Approximately 21.3829; the estimation of velocity for time 96s is shown to be the same as for time 120s, and can be assumed that the approximation for the terminal velocity is 21.3829 m/s



```
vel  ( 75.3 , 13.1 , 3.72 , 0 , 120 , 5 )
```

```
values of t approximations v(t)

Step   0:    0.000            0.0000
Step   1:   24.000           21.0542
Step   2:   48.000           21.3778
Step   3:   72.000           21.3828
Step   4:   96.000           21.3829
Step   5:  120.000           21.3829
```