```
>> main
1: bisection, 2: secant, 3: newton, 4 fixed point
Which method? 1

mean =

     2


mean =

    1.2500


mean =

    1.6250


mean =

    1.8125


mean =

    1.7188


mean =

    1.7656


mean =

    1.7422


mean =

    1.7305


mean =

    1.7363


mean =

    1.7334


mean =

    1.7319
```

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mean =

    1.7327

mean =

    1.7323

mean =

    1.7321

mean =

    1.7320

mean =

    1.7321

mean =

    1.7320

mean =

    1.7321

mean =

    1.7321

mean =

    1.7321

mean =

    1.7320

mean =

    1.7321

mean =
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    1.7321

mean =

    1.7321

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mean =

    1.7321


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mean =

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mean =

    1.7321


mean =

    1.7321


mean =

    1.7321


mean =

    1.7321


mean =

    1.7321
```

Iteration	x_k	e_k	e_k/e_{k-1}	e_k/e_{k-1}^1.6	e_k/e_{k-1}^2
1	2.00000000000000	2.6795e-01			
2	1.25000000000000	4.8205e-01	4.8205e-01	1.7990e+00	6.7141e+00
3	1.62500000000000	1.0705e-01	1.0705e-01	2.2207e-01	4.6069e-01
4	1.81250000000000	8.0449e-02	8.0449e-02	7.5150e-01	7.0201e+00
5	1.71875000000000	1.3301e-02	1.3301e-02	1.6533e-01	2.0551e+00
6	1.76562500000000	3.3574e-02	3.3574e-02	2.5242e+00	1.8978e+02
7	1.74218750000000	1.0137e-02	1.0137e-02	3.0192e-01	8.9926e+00
8	1.73046875000000	1.5821e-03	1.5821e-03	1.5607e-01	1.5397e+01
9	1.73632812500000	4.2773e-03	4.2773e-03	2.7036e+00	1.7089e+03
10	1.73339843750000	1.3476e-03	1.3476e-03	3.1506e-01	7.3659e+01
11	1.73193359375000	1.1721e-04	1.1721e-04	8.6978e-02	6.4541e+01
12	1.73266601562500	6.1521e-04	6.1521e-04	5.2486e+00	4.4778e+04
13	1.73229980468750	2.4900e-04	2.4900e-04	4.0474e-01	6.5789e+02
14	1.73211669921875	6.5892e-05	6.5892e-05	2.6463e-01	1.0628e+03
15	1.73202514648438	2.5661e-05	2.5661e-05	3.8944e-01	5.9104e+03
16	1.73207092285156	2.0115e-05	2.0115e-05	7.8388e-01	3.0548e+04
17	1.73204803466797	2.7729e-06	2.7729e-06	1.3785e-01	6.8530e+03

```
   18      1.73205947875977   8.6712e-06    8.6712e-06     3.1271e+00       1.1277e+06
   19      1.73205375671387   2.9491e-06    2.9491e-06     3.4011e-01       3.9223e+04
   20      1.73205089569092   8.8122e-08    8.8122e-08     2.9881e-02       1.0132e+04
   21      1.73204946517944   1.3424e-06    1.3424e-06     1.5233e+01       1.7287e+08
   22      1.73205018043518   6.2713e-07    6.2713e-07     4.6718e-01       3.4802e+05
   23      1.73205053806305   2.6951e-07    2.6951e-07     4.2974e-01       6.8525e+05
   24      1.73205071687698   9.0692e-08    9.0692e-08     3.3651e-01       1.2486e+06
   25      1.73205080628395   1.2849e-09    1.2849e-09     1.4168e-02       1.5622e+05
   26      1.73205085098743   4.3419e-08    4.3419e-08     3.3791e+01       2.6298e+10
   27      1.73205082863569   2.1067e-08    2.1067e-08     4.8520e-01       1.1175e+07
   28      1.73205081745982   9.8909e-09    9.8909e-09     4.6950e-01       2.2286e+07
   29      1.73205081187189   4.3030e-09    4.3030e-09     4.3505e-01       4.3984e+07
   30      1.73205080907792   1.5090e-09    1.5090e-09     3.5069e-01       8.1500e+07
   31      1.73205080768093   1.1206e-10    1.1206e-10     7.4257e-02       4.9208e+07
   32      1.73205080698244   5.8643e-10    5.8643e-10     5.2333e+00       4.6702e+10
   33      1.73205080733169   2.3719e-10    2.3719e-10     4.0446e-01       6.8969e+08
   34      1.73205080750631   6.2566e-11    6.2566e-11     2.6378e-01       1.1121e+09
   35      1.73205080759362   2.4746e-11    2.4746e-11     3.9552e-01       6.3217e+09
   36      1.73205080754997   1.8910e-11    1.8910e-11     7.6415e-01       3.0880e+10
   37      1.73205080757180   2.9181e-12    2.9181e-12     1.5432e-01       8.1607e+09
   38      1.73205080756088   7.9958e-12    7.9958e-12     2.7401e+00       9.3899e+11
   39      1.73205080756634   2.5389e-12    2.5389e-12     3.1752e-01       3.9711e+10
   40      1.73205080756907   1.8963e-13    1.8963e-13     7.4690e-02       2.9419e+10
   41      1.73205080756770   1.1746e-12    1.1746e-12     6.1944e+00       3.2666e+13
   42      1.73205080756838   4.9249e-13    4.9249e-13     4.1928e-01       3.5695e+11
>> main
1: bisection, 2: secant, 3: newton, 4 fixed point
Which method? 1

mean =

     2


mean =

    1.2500


mean =

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mean =

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```
mean =

    1.7321


Iteration         x_k             e_k      e_k/e_{k-1}   e_k/e_{k-1}^1.6   e_k/e_{k-1}^2
    1      2.00000000000000   2.6795e-01
    2      1.25000000000000   4.8205e-01    1.7990e+00     4.0600e+00       6.7141e+00
    3      1.62500000000000   1.0705e-01    2.2207e-01     3.4862e-01       4.6069e-01
    4      1.81250000000000   8.0449e-02    7.5150e-01     2.9900e+00       7.0201e+00
    5      1.71875000000000   1.3301e-02    1.6533e-01     7.8484e-01       2.0551e+00
    6      1.76562500000000   3.3574e-02    2.5242e+00     3.6445e+01       1.8978e+02
    7      1.74218750000000   1.0137e-02    3.0192e-01     2.4596e+00       8.9926e+00
    8      1.73046875000000   1.5821e-03    1.5607e-01     2.6653e+00       1.5397e+01
    9      1.73632812500000   4.2773e-03    2.7036e+00     1.4552e+02       1.7089e+03
   10      1.73339843750000   1.3476e-03    3.1506e-01     9.1710e+00       7.3659e+01
   11      1.73193359375000   1.1721e-04    8.6978e-02     5.1693e+00       6.4541e+01
   12      1.73266601562500   6.1521e-04    5.2486e+00     1.4111e+03       4.4778e+04
   13      1.73229980468750   2.4900e-04    4.0474e-01     3.9054e+01       6.5789e+02
   14      1.73211669921875   6.5892e-05    2.6463e-01     4.4659e+01       1.0628e+03
   15      1.73202514648438   2.5661e-05    3.8944e-01     1.4947e+02       5.9104e+03
   16      1.73207092285156   2.0115e-05    7.8388e-01     5.3886e+02       3.0548e+04
   17      1.73204803466797   2.7729e-06    1.3785e-01     1.1015e+02       6.8530e+03
   18      1.73205947875977   8.6712e-06    3.1271e+00     8.5035e+03       1.1277e+06
   19      1.73205375671387   2.9491e-06    3.4011e-01     4.5715e+02       3.9223e+04
   20      1.73205089569092   8.8122e-08    2.9881e-02     7.8218e+01       1.0132e+04
   21      1.73204946517944   1.3424e-06    1.5233e+01     3.4912e+05       1.7287e+08
   22      1.73205018043518   6.2713e-07    4.6718e-01     1.9891e+03       3.4802e+05
   23      1.73205053806305   2.6951e-07    4.2974e-01     2.9285e+03       6.8525e+05
   24      1.73205071687698   9.0692e-08    3.3651e-01     3.8648e+03       1.2486e+06
   25      1.73205080628395   1.2849e-09    1.4168e-02     3.1899e+02       1.5622e+05
   26      1.73205085098743   4.3419e-08    3.3791e+01     1.0564e+07       2.6298e+10
   27      1.73205082863569   2.1067e-08    4.8520e-01     1.7222e+04       1.1175e+07
   28      1.73205081745982   9.8909e-09    4.6950e-01     2.6056e+04       2.2286e+07
   29      1.73205081187189   4.3030e-09    4.3505e-01     3.8526e+04       4.3984e+07
   30      1.73205080907792   1.5090e-09    3.5069e-01     5.1945e+04       8.1500e+07
   31      1.73205080768093   1.1206e-10    7.4257e-02     2.1019e+04       4.9208e+07
   32      1.73205080698244   5.8643e-10    5.2333e+00     7.3886e+06       4.6702e+10
   33      1.73205080733169   2.3719e-10    4.0446e-01     2.0532e+05       6.8969e+08
   34      1.73205080750631   6.2566e-11    2.6378e-01     2.3429e+05       1.1121e+09
   35      1.73205080759362   2.4746e-11    3.9552e-01     8.0054e+05       6.3217e+09
   36      1.73205080754997   1.8910e-11    7.6415e-01     2.7438e+06       3.0880e+10
   37      1.73205080757180   2.9181e-12    1.5432e-01     6.5432e+05       8.1607e+09
   38      1.73205080756088   7.9958e-12    2.7401e+00     3.6874e+07       9.3899e+11
   39      1.73205080756634   2.5389e-12    3.1752e-01     2.2918e+06       3.9711e+10
   40      1.73205080756907   1.8963e-13    7.4690e-02     1.0954e+06       2.9419e+10
   41      1.73205080756770   1.1746e-12    6.1944e+00     4.5153e+08       3.2666e+13
   42      1.73205080756838   4.9249e-13    4.1928e-01     9.9018e+06       3.5695e+11
>> main
1: bisection, 2: secant, 3: newton, 4 fixed point
Which method? 2

Iteration         x_k             e_k      e_k/e_{k-1}   e_k/e_{k-1}^1.6   e_k/e_{k-1}^2
    1      1.18750000000000   5.4455e-01
    2      1.52666666666667   2.0538e-01    3.7716e-01     5.4912e-01       6.9261e-01
    3      1.77325759901750   4.1207e-02    2.0063e-01     5.3365e-01       9.7687e-01
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    4      1.72948613614626   2.5647e-03    6.2239e-02     4.4674e-01       1.5104e+00
    5      1.73202063639781   3.0171e-05    1.1764e-02     4.6975e-01       4.5870e+00
    6      1.73205082992306   2.2354e-08    7.4091e-04     4.6082e-01       2.4557e+01
    7      1.73205080756868   1.9451e-13    8.7013e-06     4.6552e-01       3.8925e+02
    8      1.73205080756888   0.0000e+00    0.0000e+00     0.0000e+00       0.0000e+00
>> main
1: bisection, 2: secant, 3: newton, 4 fixed point
Which method? 3

Iteration         x_k             e_k      e_k/e_{k-1}   e_k/e_{k-1}^1.6   e_k/e_{k-1}^2
    1      3.25000000000000   1.5179e+00
    2      2.08653846153846   3.5449e-01    2.3353e-01     1.8043e-01       1.5385e-01
    3      1.76216323998582   3.0112e-02    8.4946e-02     1.6125e-01       2.3963e-01
    4      1.73230809320663   2.5729e-04    8.5442e-03     7.4449e-02       2.8374e-01
    5      1.73205082667515   1.9106e-08    7.4261e-05     1.2281e-02       2.8863e-01
    6      1.73205080756888   2.2204e-16    1.1622e-08     6.8511e-04       6.0826e-01
    7      1.73205080756888   0.0000e+00    0.0000e+00     0.0000e+00       0.0000e+00
>> main
1: bisection, 2: secant, 3: newton, 4 fixed point
Which method? 4

Iteration         x_k             e_k      e_k/e_{k-1}   e_k/e_{k-1}^1.6   e_k/e_{k-1}^2
    1      1.69078493020360   4.1266e-02
    2      1.75194638077097   1.9896e-02    4.8213e-01     3.4576e+00       1.1684e+01
    3      1.72193161989028   1.0119e-02    5.0862e-01     5.7255e+00       2.5564e+01
    4      1.73706606179116   5.0153e-03    4.9562e-01     8.4730e+00       4.8978e+01
    5      1.72953228898671   2.5185e-03    5.0217e-01     1.3248e+01       1.0013e+02
    6      1.73330732028817   1.2565e-03    4.9891e-01     2.0147e+01       1.9810e+02
    7      1.73142186755829   6.2894e-04    5.0054e-01     3.1064e+01       3.9836e+02
    8      1.73236510628927   3.1430e-04    4.9973e-01     4.7567e+01       7.9456e+02
    9      1.73189361543409   1.5719e-04    5.0014e-01     7.3089e+01       1.5913e+03
   10      1.73212939293680   7.8585e-05    4.9993e-01     1.1211e+02       3.1804e+03
   11      1.73201151221078   3.9295e-05    5.0003e-01     1.7211e+02       6.3629e+03
   12      1.73207045457930   1.9647e-05    4.9998e-01     2.6412e+02       1.2724e+04
   13      1.73204098389652   9.8237e-06    5.0001e-01     4.0540e+02       2.5450e+04
   14      1.73205571936327   4.9118e-06    5.0000e-01     6.2217e+02       5.0897e+04
   15      1.73204835166124   2.4559e-06    5.0000e-01     9.5492e+02       1.0180e+05
   16      1.73205203552009   1.2280e-06    5.0000e-01     1.4656e+03       2.0359e+05
   17      1.73205019359262   6.1398e-07    5.0000e-01     2.2494e+03       4.0718e+05
   18      1.73205111455684   3.0699e-07    5.0000e-01     3.4523e+03       8.1436e+05
   19      1.73205065407485   1.5349e-07    5.0000e-01     5.2985e+03       1.6287e+06
   20      1.73205088431588   7.6747e-08    5.0000e-01     8.1320e+03       3.2575e+06
   21      1.73205076919537   3.8374e-08    5.0000e-01     1.2481e+04       6.5149e+06
   22      1.73205082675563   1.9187e-08    5.0000e-01     1.9155e+04       1.3030e+07
   23      1.73205079797550   9.5934e-09    5.0000e-01     2.9399e+04       2.6060e+07
   24      1.73205081236557   4.7967e-09    5.0000e-01     4.5122e+04       5.2119e+07
   25      1.73205080517053   2.3983e-09    5.0000e-01     6.9252e+04       1.0424e+08
   26      1.73205080876805   1.1992e-09    5.0000e-01     1.0629e+05       2.0848e+08
   27      1.73205080696929   5.9959e-10    5.0000e-01     1.6313e+05       4.1695e+08
   28      1.73205080786867   2.9979e-10    5.0000e-01     2.5036e+05       8.3391e+08
   29      1.73205080741898   1.4990e-10    5.0000e-01     3.8425e+05       1.6678e+09
   30      1.73205080764383   7.4948e-11    5.0000e-01     5.8975e+05       3.3357e+09
   31      1.73205080753140   3.7474e-11    5.0000e-01     9.0512e+05       6.6712e+09
   32      1.73205080758761   1.8737e-11    5.0001e-01     1.3892e+06       1.3343e+10
   33      1.73205080755951   9.3685e-12    4.9999e-01     2.1321e+06       2.6685e+10
   34      1.73205080757356   4.6843e-12    5.0000e-01     3.2723e+06       5.3370e+10
   35      1.73205080756654   2.3421e-12    5.0000e-01     5.0223e+06       1.0674e+11
   36      1.73205080757005   1.1711e-12    5.0000e-01     7.7081e+06       2.1348e+11
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    37      1.73205080756829   5.8531e-13    4.9981e-01     1.1826e+07       4.2680e+11
    38      1.73205080756917   2.9265e-13    5.0000e-01     1.8161e+07       8.5425e+11
>>
```