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```
Initial value: x0 = 2.0000000
Maximum iterations: 100
Tolerance: 0.0000100
```

====ITERATION METHOD====

```
x1   = 1.6666667
x2   = 1.2592593
x3   = 0.8619113
x4   = 0.5809637
x5   = 0.4458396
x6   = 0.3995910
x7   = 0.3865577
x8   = 0.3831423
x9   = 0.3822660
x10  = 0.3820424
x11  = 0.3819855
x12  = 0.3819710
x13  = 0.3819673
```

```
The solution is: 0.3819673
Testing result with f(x) is it really close to zero?
f(x) = -0.0000029
```

```
Initial value: x0 = 1.0000000
Maximum iterations: 100
Tolerance: 0.0000100
```

====ITERATION METHOD====

```
x1   = 0.6666667
x2   = 0.4814815
x3   = 0.4106081
x4   = 0.3895330
x5   = 0.3839120
x6   = 0.3824628
x7   = 0.3820926
x8   = 0.3819983
x9   = 0.3819742
x10  = 0.3819681
```

```
The solution is: 0.3819681
Testing result with f(x) is it really close to zero?
f(x) = -0.0000047
```

Initial value:  $x_0 = 3.0000000$   
Maximum iterations: 100  
Tolerance: 0.0000100

===== ITERATION METHOD =====

x1 = 3.3333333  
x2 = 4.0370370  
x3 = 5.7658892  
x4 = 11.4151594  
x5 = 43.7686214  
x6 = 638.8974064  
x7 = 136063.6319682  
x8 = 6171103981.7925920  
x9 = 12694174784698793984.0000000  
x10 = 53714024488160894832272098718033903616.0000000  
x11 = 961732142238249496622220166972179734223123056119113512055533917872347676672.0000000  
x12 = 308309571138057520420659203244262176926241312745487146681765912452839885478107347194964475511351391  
x13 = 316849305517776468180819184217648142601865944426854940306557920998777044806355742181499233729375781

The program failed after 14 iterations,  $x = 316849305517776468180819184217648142601865944426854940306557920998777044806355742181499233729375781$   
The current  $x$  is too large, then it's divergent.