1.

```
>_ Console  ×    +

  ∨     python3 mai...

> Environment updated. Reloading shell...
a. Shooting method result:
x = 0.0, y ≈ 1.000000
x = 0.1, y ≈ 1.016650
x = 0.2, y ≈ 1.059293
x = 0.3, y ≈ 1.124476
x = 0.4, y ≈ 1.209121
x = 0.5, y ≈ 1.310528
x = 0.6, y ≈ 1.426377
x = 0.7, y ≈ 1.554712
x = 0.8, y ≈ 1.693917
x = 0.9, y ≈ 1.842688
x = 1.0, y ≈ 2.000000

b. Finite-difference method result:
x = 0.0, y ≈ 1.000000
x = 0.1, y ≈ 1.191310
x = 0.2, y ≈ 1.370197
x = 0.3, y ≈ 1.534406
x = 0.4, y ≈ 1.681415
x = 0.5, y ≈ 1.808340
x = 0.6, y ≈ 1.911830
x = 0.7, y ≈ 1.987940
x = 0.8, y ≈ 2.031970
x = 0.9, y ≈ 2.038272
x = 1.0, y ≈ 2.000000

c. Variation approach result:
x = 0.0, y ≈ 1.000000
x = 0.1, y ≈ 1.167931
x = 0.2, y ≈ 1.321198
x = 0.3, y ≈ 1.451456
x = 0.4, y ≈ 1.559015
x = 0.5, y ≈ 1.650110
x = 0.6, y ≈ 1.731606
x = 0.7, y ≈ 1.807108
x = 0.8, y ≈ 1.876849
x = 0.9, y ≈ 1.940522
x = 1.0, y ≈ 2.000000
```