

```

1 def main():
2     eps = 2.0 ** -30.0
3
4     print("初期区間 [a,b] を入力してください--->a b")
5     a, b = map(float, input().split())
6     print("区間の分割数 n を入力してください--->n")
7     n = int(input())
8
9     # 対象区間を探索しながら2分法を適用
10    h = (b - a) / n
11    y1 = f(a)
12    x = a + h
13    while x <= b:
14        y2 = f(x)
15        if y1 * y2 < 0.0:
16            print("求める答えは x={:.6f} です".format(bisection(x-h, x, eps)))
17        y1 = y2
18        x += h
19
20
21 def bisection(a: float, b: float, eps: float):
22     while True:
23         c = (a + b) / 2.0
24         if f(a) * f(c) < 0:
25             b = c
26         else:
27             a = c
28         if abs(b - a) < eps:
29             break
30
31     c = (a + b) / 2.0
32
33     return c
34
35
36 # 関数の定義
37 def f(x: float):
38     return x ** 5 - 5 * (x ** 3) + 4 * x
39
40
41 if __name__ == "__main__":
42     main()

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