```
[5]:  import math

      def func(f, a, b):
          if f(a)*f(b) >=0:
              print("invalid interval")
              return None
          while b-a >= 0.0000000001:
              m=(a+b)/2
              if f(a)*f(m)<0:
                  b=m
              else:
                  a=m
          return round((a+b)/2, 10)
      def f(x):
          if x==0:
              x=x+0.0000000001
          return math.exp(x) + math.log(x)
      a=float(input("a: "))
      b=float(input("b: "))
      print(func(f,a,b))

      a:  0
      b:  1
      0.2698741376
```

```python
[9]: import math

     def func(f, a, b):
         if f(a)*f(b) >=0:
             print("invalid interval")
             return None
         while b-a >= 0.0000000001:
             m=(a+b)/2
             if f(a)*f(m)<0:
                 b=m
             else:
                 a=m
         return round((a+b)/2, 10)
     def f(x):
         if x==0:
             x=x+0.0000000001
         return math.sin(x)/math.log(x)
     a=float(input("a: "))
     b=float(input("b: "))
     print(func(f,a,b))

     a:  3
     b:  4
     3.1415926536
```

Code for: ln(cos(x))

```
[4]:  import math

      def func(f, a, b):
          if f(a)*f(b) >=0:
              print("invalid interval")
              return None
          while b-a >= 0.0000000001:
              m=(a+b)/2
              if f(a)*f(m)<0:
                  b=m
              else:
                  a=m
          return round((a+b)/2, 10)
      def f(x):
          if x==0:
              x=x+0.0000000001
          return math.log(math.cos(x))
      a=float(input("a: "))
      b=float(input("b: "))
      print(func(f,a,b))

      a:  5
      b:  7
      invalid interval
      None
```

Code for: arctan(x) - x^2

```python
import math

def func(f, a, b):
    if f(a)*f(b) >=0:
        print("invalid interval")
        return None
    while b-a >= 0.0000000001:
        m=(a+b)/2
        if f(a)*f(m)<0:
            b=m
        else:
            a=m
    return round((a+b)/2, 10)
def f(x):
    if x==0:
        x=x+0.0000000001
    return math.atan(x)-x**2
a=float(input("a: "))
b=float(input("b: "))
print(func(f,a,b))

a:  0
b:  2
0.8336061944
```