The Taylor series expansion for a^x is:

$$a^x = \sum_{n=0}^{\infty} \frac{\ln(a)^n}{n!} x^n$$

Write a script that determines a^x using the Taylor series expansion. The user should enter values for a and x. Use a while loop to add the terms of the Taylor series. If c_n is the nth term in the series, then error can be calculated as $E = \left|\frac{c_n}{S_{n-1}}\right|$. S_{n-1} is the sum of all the previous n-1 terms. You should stop adding terms when E <0.000001. You should get the following when running the code:

```
Enter the value a: 2

Enter the value x: 3.5

After 15 terms, the sum = 11.313708
```

Recall that this Taylor series is an approximation to a^x. For this example then, 11.313708 is the approximate value of $2^{3.5}$.