Project Extension: Approximating Values of Trigonometric Functions

Write a separate program that uses polynomials to approximate values of logarithms. For this program, the core function will compute values of the natural log only for inputs of 1 to $\sqrt{2}$ and other functions will use properties of logarithms to extend the allowed inputs.

Necessary constants: LN2 = np.log(2) and SQRT2 = np.sqrt(2)

You do not need to turn in a design document or a math write up for the extension, but it would be foolish to attempt to write the code without at least planning it… Sample runs:

```
Enter the base for your logarithm: 5
Enter that value for which you want to compute the logarithm: .012
log5.0(0.012) = -2.74807036355


Enter the base for your logarithm: 3
Enter that value for which you want to compute the logarithm: 25
log3.0(25.0) = 2.92994704144
```