Use the *Sage* code in the activity at this link or the attached Mathematica Notebook to plot the function $\sin\theta$ and power series approximations to the function to explore how well the approximations work.

You will first need to calculate the coefficients of the power series. For the first part of the worksheet, calculate these coefficients for the power series around $\theta = 0$ and for the second part of the worksheet, calculate the coefficients around $\theta = \frac{\pi}{6}$. You may have done these calculations in Calculating Coefficients for a Power Series.

You will need to know a few things about Mathematica Notebooks:

- To select a line of code, click anywhere on the line.
- To evaluate the line of code, first select it and then hit SHIFT/ENTER.
- Some of the lines of code are missing information (the values of the coefficients. Enter them BEFORE evaluating the line of code.)