

1. Read Sections 1.1 and 1.2 from the textbook (nothing needs to be turned in).
2. Run the MATLAB script file **SinePlot** given on pages 14-15 (bottom of page 14 and top of page 15). Turn in **only** the plots for $n = 4$ and $n = 200$.
3. Do problem P1.2.3 from the textbook.
4. Write a MATLAB function to compute P_n , where

$$P_{n+1} = 2^n \sqrt{2 \left\{ 1 - \sqrt{1 - \left(\frac{P_n}{2^n}\right)^2} \right\}}, \quad \text{for } n = 2, 3, \dots$$
$$P_2 = 2\sqrt{2}.$$

For your function, you should create a text file called myFunc.m (or choose a different name). On the first line of the file, write: `function p = myFunc(n)`. This says that myFunc is a MATLAB function that takes `n` as an argument and outputs `p`. **Bonus:** Have your function produce an error message if the user either enters a non-integer or any number less than 2.

Compute and print out P_n for $n = 2, 3 \dots 40$. Does P_{21} seem to approximate π ? What about P_{30} ?