Lab19: Sequence Approximations

- Make two plots of a sequence that approximates π.

- Use two different sequences.

Sequence 1

$$\frac{\pi}{4} = \frac{1}{1} - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \cdots$$

Sequence 2

$$\frac{\pi^2}{6} = \frac{1}{1} + \frac{1}{4} + \frac{1}{9} + \frac{1}{16} + \frac{1}{25} + \cdots$$

- Note that the sign of the terms alternates in Sequence 1.

- Note that the sign of the terms does not alternate in Sequence 2 but that π is squared.

- Include up to the first thirty terms only. Also plot π itself to show a baseline.

- The horizontal axis is the number of terms included and vertical is the approximation.