

**EX.3.2.1, Sauer3**

- a. Find the degree 2 interpolating polynomial  $p_2(x)$  through the points  $(0, 0)$ ,  $(\frac{\pi}{2}, 1)$ , and  $(\pi, 0)$ .
- b. Calculate  $p_2(\frac{\pi}{4})$ , an approximation for  $\sin(\frac{\pi}{4})$ .
- c. Use Theorem 3.3 to give an error bound for the approximation in part (b).
- d. Using a Colab Jupyter Notebook, compare the actual error to your error bound.